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COLLEGE COUNSELOR AS A VARIABLE IN GRADUATION OF COUNSELED STUDENTS.

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THE FACTORS RELATED TO COUNSELING AND THEIR EFFECT UPON GRADUATION WERE STUDIED. THREE STUDIES WHICH HAD BEEN PREVIOUSLY CONDUCTED WERE REPLICATED. THE PREVIOUS STUDIES WERE CONDUCTED AT THE UNIVERSITY OF MISSOURI BY SHEPHERD, BORRESEN, AND JOHNSON. THE PRESENT STUDY USED 471 SUBJECTS. A NONCOUNSELED COMPARISON GROUP WAS MATCHED TO A COUNSELED GROUP FOR THE SHEPHERD REPLICATION. PART OF SHEPHERD'S COUNSELED SAMPLE WITH APPROPRIATE DIAGNOSTIC CODES WAS USED FOR THE JOHNSON REPLICATION. IN ALL CASES OF ANALYTICAL TREATMENTS OF THE BASIC STUDY, COMPARISONS WERE MADE BETWEEN COUNSELOR DIAGNOSTIC BIAS AND COUNSELOR SUCCESS RATE. RESULTS WERE PRESENTED FOR EACH OF THE REPLICATIONS. RESULTS WERE EQUIVOCAL. (RS)

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COLLEGE COUNSELOR AS A VARIABLE IN GRADUATION OF COUNSELED STUDENTS

Cooperative Research Project No. S-175

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University of Missouri
Columbia, Missouri

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CHAPTER I

INTRODUCTION

Many of the problems surrounding the evaluation of counseling which existed when counseling became a profession are still without solutions. Not only is the problem viewed differently by different people, but also the route which should be taken to solve these problems is controversial.

Patterson (1963) feels that in experimental design, there is more than merely the difficulty in determining which aspect of a complex of activities is responsible for the obtained results. When only one aspect, such as counseling, is studied, variables such as type of counseling as well as approaches, training, and experience of the counselors involved also cloud the implications of the results. Bergin (1963) cites two types of problems in outcome research. First, control groups receive non-professional therapeutic help elsewhere during the experimental period. Secondly, in the experimental factor itself, he feels two polar processes are operating: some counselors are helping their clients while others are hurting theirs. Thus, often the positive and negative influences cancel each other providing non-significant differences in means but expanded variances in the experimental group. The experimental findings of Truax and Carkhuff (1964) substantiate part of Bergin's ideas.

Though the sample used was composed of hospitalized schizophrenics, the methodology seems to suggest generalizability to nonhospitalized populations. Degree of client improvement was found to be significantly related to therapist "conditions", which included accurate therapist empathy, therapist unconditional warmth, therapist genuineness, and therapist intensity and intimacy of interpersonal contact. Not only did high conditions lead to positive change in the clients but also low conditions led to negative change. If these two therapy groups had been combined, the net result would have been comparable to that of the matched control group.

There is a great deal of disagreement over the problem of a suitable criterion against which to evaluate counseling effectiveness. Some prefer an objective, relatively easily measurable criteria. Others prefer a subjective criteria, which is harder to measure but which is felt to be more in keeping with the goals of a counselor. As an example of one viewpoint, Patterson (1963) feels it is rather questionable whether objective outcomes, such as reduction in dropouts, grade improvement, and vocational choice stability, are appropriate criteria. Since any of these do not necessarily fit all students equally well, he suggests that one must measure effects relevant to the individual such as awareness and understanding of one's self and attitudes, development of self-esteem and self-respect, etc. Ewing (1964) goes further than Patterson by suggesting that not only should the nature of the criteria be relevant to the individual, but also the direction and amount for optimum changes depends on the initial status of the client on those criteria. While a positive change on a criterion may be best for one individual, the optimum change for another individual on the same criterion may be in the negative direction. On the other hand, Baier (1949) is one of those who suggests the necessity for an examination of what counseling is and should be, as well as of the necessary characteristics of counselors. From this should come leads for the development of criteria of effective performance. Personnel should be evaluated against these criteria not only in training but on the job as well. Brunson (1959) and Williamson (1961) typify those who feel that student personnel work must be related to institutional goals. In this view, criteria reflecting these goals, such as college graduation, could be considered acceptable for measuring the effects of counseling. Tyler (1960) sees counseling as helping the client come to terms with his unique self. As his anxiety is reduced, the client's problem-solving behavior increases. Berdie (1959) feels this reduction of anxiety and defense mechanisms is often prerequisite to increasing problem-solving skills. Even when this increase in problem-solving skills is in a specific area, behavioral change may ultimately be displayed in more general terms such as higher grades, fewer dropouts, self-understanding, etc.

Callis (1963) states that knowledge of cause-and-effect relationships in counseling would be greatly facilitated if the research data could be sorted into some kind of homogeneous classification by some kind of diagnostic formulation. Apostal (1960) sees a clear danger of masking results if different kinds of counseling cases are not studied separately.

These are but examples of the many facets of the controversy. Since many of the facets are results of, among other things, different philosophical orientations, an early solution to the problem does not appear likely.

Although the multiplicity of problems inherent in outcome research is recognized, we are still faced with the question, "What can be done in counseling?" As research progresses, knowledge in the field increases, and new techniques become available, it becomes obvious that answers to a few more finite questions are within our reach. Often these answers are tentative at best. Sometimes they are merely indications that further research is needed. But from this mass of indicated possibilities comes a set of broader insights into the workings and potentialities of counseling. This, in turn, allows us another, sometimes arthritic, step forward.

The research proposed herein is the result of just such a developmental process. During the middle 1950's, a strain of research was begun at the University of Missouri attacking the problem of homogeneous classification of counseling cases. Berezin (1957) developed a set of diagnostic categories following patterns by Williamson and Darley (1937), Bordin (1946), and Pepinsky (1948). The result was a two-dimensional classification system including both the type of problem and its cause. Apostal and Miller (1959) revised these categories to the present three problem categories and five causal categories. These are:

Problem--

1. (Voc) Vocational
2. (Em) Emotional
3. (Ed) Educational

Cause--

1. (LIS) Lack of Information About Self
2. (LIE) Lack of Information About Environment
3. (CS) Conflict Within Self
4. (CO) Conflict With Others
5. (LS) Lack of Skill

In this study, these categories will often be referred to by the abbreviation in the parentheses. This classification system has been a part of the standard operating procedure of the University of Missouri Testing and Counseling Service since 1959.

In this coding procedure, the problem category best describing the primary problem and the cause category best describing the cause of the problem are recorded as the primary code (1-1, 2-3, etc.). If other significant issues were present, they could be presented as a secondary code. The code thus recorded may be, for instance, 1'2 - 1'3. This code reveals that of basic importance was a vocational problem which was primarily caused by the counselee's lack of information about himself. In addition to this primary 1-1 code, the code indicates that there was a significant emotional problem stemming from a motivational conflict within the counselee. A primary code is assigned in every instance. The use of secondary codes is optional depending on the existence of important secondary issues.

Shepherd (1962) used this classification system as a basis for studying the relationship between counseling and graduation rate. As had Faries (1955) and Toven (1945), he found that, for some reason, counseling aids graduation. Since the control group in Shepherd's study did not request counseling, the motivation factor was not controlled. However, a study which did control this motivation factor yielded similar results. Volsky (1965) found that a group of students who were counseled graduated at a significantly higher rate than a group of students who requested counseling but were denied. Shepherd also found that graduation rate was very significantly related to the type of problem developed in counseling in that those students who were counseled on one type of problem graduated at a different rate than those with another problem.

Shepherd (1962) in examining the relationship of problem to graduation, focused primarily on the counselee. A later study added a dimension to this. Using staff counselors of the University of Missouri Testing and Counseling Service in both standard procedure and controlled random assignment of clients, Borresen (1964) obtained indications that the counselor as a person is a variable in the kind of problem discussed by and worked through with the client. Using a method of cluster analysis (McQuitty, 1957) and factor analysis, Borresen found, for instance, that some counselors worked with significantly more clients with emotional problems and fewer vocational problems than is expected. The opposite was true with other counselors. Although no other research was presently available for direct comparison, a similar phenomenon called experimenter bias is known to exist in the behavioral sciences. As one example of this experimenter bias, Rosenthal (1963) reports a series of studies indicating that the experimenter's hypotheses unconsciously but significantly affect their research findings. Finding that bias exists in counseling diagnosis should, therefore, create no great surprise. It especially should not since Eells and Guppy (1963) have shown that counselors differ both in the kinds of client problems they prefer to deal with and the relative importance they attach to the various problems.

Johnson (1963), using part of the Shepherd sample as well as a new sample, examined the characteristics of three cells of the diagnostic categories: Vocational--Lack of Information About Self (1-1), Emotional--Conflict Within Self (2-3), and Emotional--Conflict With Others (2-4). One of the most striking findings was a "failure" zone in the 2-3 and 2-4 cases according to number of interviews. In the two samples studied, Johnson found that virtually none of the 2-3 and 2-4 clients graduated who had terminated counseling after approximately five to eight interviews. It appears this may be a type of downward extension of what Cartwright (1955) and Taylor (1956) found in psychotherapy. Cartwright's "failure" zone appeared with clients terminating after 13 to 21 interviews. Taylor's replication of Cartwright's study yielded a "failure" zone between 15 and 23 interviews. The therapy criterion of success used by both Cartwright and Taylor was experts' judgment as to client improvement. Although conjectures have been offered for the existence of this "failure" zone, no definitive explanations are available.

The Problem

Without assuming that graduation is the immediate and primary goal of a counselor working in a college setting, there are many indications that counseling facilitates graduation thus making it more likely that counseled students will graduate. It appears that among counseled students, those who discuss some problems with counselors graduate more frequently than clients with other problems. In addition, there are some indications that the counselor may be an important variable in the selection of the problem which is dealt with in counseling. We do not know at this point, however, to what extent the counselor himself is a variable in the graduation of counseled college students. For some reason, do the clients of some counselors graduate more frequently than the clients of other counselors? Are some counselors relatively more successful with some problems than others? If there is any counselor differential present, what way, if any, is it related to counselor diagnostic bias?

Answers to these questions may well have implications for further study with other criteria. Selection of counselor trainees, assignment of client to counselor, and selection of counselors for various types of positions are but a few of the things which may ultimately be affected.

Therefore, the purpose of this study was to study the college counselor as a variable in the graduation of counseled college students. Answers to the following three questions were sought:

1. Do the clients of some college counselors graduate from college at a significantly higher or lower rate than is expected?
2. In a subsample composed of clients who have been diagnosed as having similar problems, do the clients of some counselors graduate at a significantly higher or lower rate than is expected?
3. If there is any difference among counselors in "1" or "2" above, what way, if any, is it related to counselor diagnostic bias?

The basic assumption of this study is that the counseling of college students produces a change in behavior on the part of the client. Furthermore, it is assumed that associated with this change in behavior is an increased likelihood of graduating from college. The latter has been so indicated by previously mentioned studies.

The assumption is made that the problem which is discussed in the interview can be appropriately diagnosed. It is assumed, with some confirmation by Borresen (1963), that all counselors receive a random assignment of cases. Therefore, if any counselor differs from the other counselors in the proportion of his case load found in each of the diagnostic codes, the difference is considered to be due to the diagnostic bias of that counselor. Also, any difference found in graduation rate of clients among the counselors is in some way due to the counselor.

Possibly one of the greatest limitations of this study is that it covers the counseling done only during the first two years of college. It would, of course, be superior to have a situation in which a number of counselors remained available for the entire undergraduate period of many counselees. However, at the University of Missouri, most of the counseling is done by a doctoral student staff, many of whom are counselors for no more than one or two years. Under the circumstances, it was felt that the tightest design would be one in which the same counselor was present for the full period of consideration for the student concerned. The characteristics unique to counseling during the last two years of college will remain unknown.

It would also have been preferable if the diagnostic codes used in this study had been assigned by the counselor at the time of closing the case rather than by judges working from case notes. It is, however, impossible at this time to obtain a large enough sample of these cases who have had time to graduate.

This study could undoubtedly be strengthened by a follow-up study on the students who left the University prior to graduation. Due to the difficulty and labor required by such a project, it was necessary to judge it outside of the scope of this study. This is not in any way saying that the topic is unworthy of consideration.

In addition to the treatment of this basic problem, part or all of the Shepherd (1962), Borresen (1964), and Johnson (1963) studies were replicated. The replication of the Stepherd study was undertaken because the present study was largely based on the assumption that counseling affects the graduation of college students as Shepherd suggested. Since so few applicable studies are presently available, it was felt that further testing of this assumption was necessary. The replication of part of the Borresen study was an integral part of the treatment of the third question of the basic problem in this study. Since the necessary data was readily available for the replication of the Johnson study, it was decided that the "failure" zone phenomenon was sufficiently interesting to warrant a check on its reliability.

The following definitions should help one in reading the remainder of this study.

1. Problem. The diagnostic code determined by the counselor according to the diagnostic categories developed by Apostal and Miller (1959).
2. Counselor. A staff counselor at the University of Missouri Testing and Counseling Service. Practicum students were not included.

3. Counselor diagnostic bias. A tendency to deviate consistently in a predictable direction from an expected pattern as evidenced by placing statistically atypical proportions of clients within the various diagnostic codes.

4. Counseling success. Graduation from the University of Missouri or its equivalent.

In discussing the two-dimensional diagnostic classification system (Apostal & Miller, 1959), certain terms have become standard.

5. Dimension. Either of the two major divisions of the classification system, the problem or the cause.

6. Category. Each of the three areas within the problem dimension and the five causal areas.

7. Code. Any cell in the three by five matric formed by the classification system. Fifteen such primary codes may be formed by combinations of one problem category and one causal category. In case a lesser problem and/or cause is significant, a secondary code may be added.

CHAPTER II

SELECTION OF THE SAMPLE

Procedure

Clients included in the study were those who satisfied the following requirements:

1. Entering freshmen at the University of Missouri in school years 1955-56, 1956-57, 1957-58, 1958-59 or 1959-60.
2. Counseled by one of the doctoral candidate staff counselors included in this study during either their freshman or sophomore years or both.
3. Scores of T-score 40 or higher on both of the freshman placement tests.
4. Was counseled on a problem which could be satisfactorily diagnosed from case notes by judges.

Counselors included in the study were those who satisfied the following requirements:

1. Counselor during both the freshman and sophomore years of any of the classes.
2. Doctoral candidate working as a regular staff counselor on a part-time basis.

The diagnostic codes used in the study were those assigned to the cases by judges. Although only primary codes indicating the most important problem and cause of that problem were used in the study, the judges were encouraged also to assign secondary codes if important secondary issues were present. The case notes for each case which met the criteria were drawn from the files of the University Testing and Counseling Service. Each set of case notes were coded independently by two judges. If these two primary codes agreed, the code was assigned to the case. If there was no agreement, a third judge independently coded the case. If there was then agreement between any two of the three judges, that primary code was accepted. If there was still no agreement, the case was discarded from the study.

The judges considering any individual case were drawn from a pool of twenty-eight post-masters students in counseling psychology who had experience both as counselors and in the use of the diagnostic categories.

The criterion of graduation was satisfied by those counselees who:

1. Had graduated from the University of Missouri with a bachelor's degree or its equivalent.
2. Had entered a professional school of the University of Missouri. This was included because entrance into a graduate level professional school is an objective of some undergraduates and graduation is not always required for this acceptance.

Since five years were allowed, a majority of those who will ultimately meet the criteria had done so. It is further assumed that error involved by the later graduation is spread randomly over all the counselors and does not affect the results of this study. It is granted that some of these non-graduates will have dropped-out of the University of Missouri and will have graduated from another school. Since there is no basis to assume otherwise, it is assumed that this error will also be spread evenly over all the counselors and will not have a significant adverse effect on the results.

In instances where two or more sets of case notes for one client were successfully coded with different codes, the code representing the largest number of interviews was used. If the number of interviews for each code was the same, then the code representing the most recent contact with a counselor was used.

Results

There were 14 counselors and 487 cases which ultimately met all the criteria for inclusion in this study. However, one counselor, Counselor 11, was found to have only 16 clients. Since this was judged to be too small to be analyzed meaningfully, Counselor 11 and his 16 clients were dropped from the study. This left 13 counselors and 471 clients in the final sample.

A number of the cases which might have been included in this study were not successfully coded. It was, therefore, necessary to examine the sample and the coding procedure to attempt to find how adequate the coding procedure had been and how representative the resulting sample was of the original sample. This could then be taken into consideration in the interpretation of the results of the study.

After examining the files of the University Testing and Counseling Service, 686 sets of case notes were found to meet the first three parts of the criteria for inclusion in this study. These case notes were then coded by 28 judges. Of these 686 sets of notes, 306 cases, or 44.6 per cent obtained agreement on two out of two judgings. An additional 200, or 29.2 per cent were successfully coded on a two out of three basis. The criterion of two out of three judge agreement could not be reached on the remaining 26.2 per cent of the sample. Therefore, 506 sets of case notes, or 73.8 per cent of the sample, were successfully coded.

Examination of the cases which were not successfully coded reveals that agreement was almost achieved on a number of cases. For instance, all three judges agreed on one part of the primary code in 44 of the 180 cases, about 25 per cent. In 36 of the cases, there was agreement between two judges on a problem and a causal code within the assigned primary and secondary codes.

The examination of the proportion of case notes which were successfully coded is in a sense an inter-judge reliability check. An intrajudge reliability check was also obtained by 27 of the judges recoding 6 weeks later four of the same cases which each had coded on the first round. Recodings were thus obtained for 107 cases. One case was lost because a counselor had been given an inappropriate case. These four cases were given each judge mixed with 5 other cases which they had not previously coded and they were not told of the recoding. The counselors did not in all cases recognize that some of the cases were repeats. Complete agreement of primary code was obtained in 53.3 per cent of the cases whereas in 11.2 per cent of the cases there was no agreement at all. In 33.6 per cent of the cases, one primary code was the same. In about two-fifths of these cases, the second primary code was found within the secondary code assigned. In summary, 86.9 per cent of the cases were coded with at least one of the primary codes previously used. Identical codes were given in 53.3 per cent of the cases. In 11.2 per cent of the cases, the codes were completely different.

A measure of validity of the judge codes was obtained by comparing the judge codes to the diagnostic code given by the counselor at the time of counseling. The counselor code was available for 216 sets of case notes. The identical code had been assigned to 142 or 65.7 per cent of the cases. Fifty-five additional cases, or 25.5 per cent had agreement on one of the two primary codes. In 14 of the 55 cases, or 6.5 per cent of the total sample, the second primary code was found in the secondary code assigned by the counselor. In only 11 cases, or 5.1 per cent were the codes entirely different. Therefore, it can be noted that one of the 2 parts of the primary code was identical in 91.2 per cent of the cases and the entire code was identical in 65.7 per cent of the cases.

It is difficult to say how the study would have been affected by inclusion of the 180 cases upon which agreement was not reached. Some indications were obtained by examining the graduation success of the 78 cases which had been coded by the counselor at the time of counseling but which were not successfully coded by the judges (noncoded group).

Though we cannot say with assurance, there are indications that the coded sample represents a higher graduation rate than would have been obtained by the entire group. There was found to be a significant difference at the .05 level of confidence between the graduation rate of the total coded group and the noncoded group with the higher rate belonging to the coded group. This significance persisted when a correction was made for the sizeably, but not significantly, lower proportion of sophomores in the noncoded group. However, when this noncoded group was compared to the graduation rate representing the coded cases of the same time period, 1958-61, the difference did not reach significance at the .05 level (Chi-square = 3.553, df = 1, $P > .05$). This chi-square was, of course, even lower when corrected for proportion of sophomores.

By examining this same noncoded group, inferences can be made as to whether the different categories are represented randomly or whether some were more difficult to code. The results indicate that neither the problem categories (Chi-square = 13.089, df = 2, $P < .01$) nor the causal categories (Chi-square = 16.577, df = 4, $P < .01$) are represented in the noncoded group as they are in the total coded group. Examination indicates that the coded group has a somewhat higher proportion in the Voc, LIS, and LIE categories and a somewhat lower proportion in the Em, Ed, CO and LS categories than reality warrants.

CHAPTER III

REPLICATIONS OF STUDIES

The Shepherd Study

Shepherd's study was based on two research hypotheses (Shepherd, 1962, p. 13):

1. There is no difference in the proportional number of college students who receive the baccalaurate degree or the equivalent from a counseled group than that from a noncounseled group matched as to sex, academic ability, and division in which registered.

2. There is no difference in the proportional number of college students counseled who receive the baccalaureate degree or the equivalent from a group with a particular diagnosed problem than there is from a group with a different problem.

Sample

The counseled group of the Shepherd study was selected to meet the following specifications (Shepherd, 1962, p. 14):

1. Freshmen during the school years 1955-56 or 1956-57.
2. Counseled by a professional staff counselor at the University Testing and Counseling Service for at least two interviews at any time during their four year undergraduate career. . . .
3. Had freshman placement test scores exceeding a T score of 40 on both instruments then in use. . . .

4. Had a problem upon which agreement could be reached as to diagnostic category.

The noncounseled comparison group of the Shepherd study was selected using the following criteria (Shepherd, 1962, pp. 17-18):

> 1. Freshmen during the school years 1955-56 or 1956-57.
> 2. Did not request or receive counseling at the University Testing and Counseling Service during their four year undergraduate career.
> 3. Could be paired with a member of the Experimental Group with a sum of T scores on the two freshman placement tests differing . . . not in excess of two T score points. . . . (This sum of T scores for each counselee will be referred to as an Index of Academic Ability.)
> 4. Could be paired with a member of the Experimental Group of the same sex.
> 5. Could be paired with a member of the Experimental Group from the same division within the University in which registered.

In the replication, the counseled sample of 471 was used. The noncounseled sample were matched using the same criteria as Shepherd except for one addition. All counseled students were matched with noncounseled students of the same class who also enrolled for the school year in which the counseling took place. In other words, students counseled during their sophomore year were matched with noncounseled sophomores.

Of the 471 counseled students in the sample, nine were not successfully matched with noncounseled students. Therefore, the replication sample included 462 counseled students and a matched group of noncounseled students.

The First Hypothesis

The null hypothesis states there is no difference in graduation rate between a counseled group and a matched noncounseled group. Shepherd rejected this hypothesis at the .001 level of confidence (Chi-square = 11.02). Fifty per cent of his counseled group graduated compared with 37% for the noncounseled group.

The present sample, however, did not yield a significant difference between the graduation rates of the counseled and noncounseled groups. The difference which was present did, however, surpass the .20 level of confidence (Chi-square = 2.095) in the same direction as the Shepherd study. Table 1 presents this information on the Shepherd and Ricksecker groups.

Table 1 also compares the ability levels of the groups. The Index of Academic Ability (IAA) referred to is the sum of the two T scores on the freshman placement tests. It should be pointed out that although Shepherd did not find a significant difference in ability between the graduated and nongraduated students in either the counseled or noncounseled groups, this study showed a significant difference

TABLE 1

A Comparison of the Total Groups in the Ricksecker (R) and Shepherd (S) Studies Indicating Mean Index of Academic Ability (IAA) and Per Cent Graduated of the Counseled-Noncounseled and Graduated-Nongraduated Samples

	N	IAA			Per Cent	Chi Square	P
		Mean	t	P			
Graduated:							
(S) Counseled	149	108.4	0.27	>.10	50.5	11.02	<.001*
(S) Noncounseled	109	109.9			36.9		
(R) Counseled	243	112.5	-0.24	>.80	52.6	2.10	>.10
(R) Noncounseled	221	112.7			47.8		
Nongraduated:							
(S) Counseled	146	108.7	1.14	>.10	49.5		
(S) Noncounseled	186	106.8			63.1		
(R) Counseled	219	107.7	-0.13	>.80	47.4		
(R) Noncounseled	241	108.0			52.2		
Counseled:							
(S) Graduated	149	108.4	0.12	>.10	50.5		
(S) Nongraduated	146	108.7			49.5		
(R) Graduated	243	112.5	3.72	<.001*	52.6		
(R) Nongraduated	219	107.7			47.4		
Noncounseled:							
(S) Graduated	109	109.9	1.83	>.05	36.9		
(S) Nongraduated	186	106.8			63.1		
(R) Graduated	221	112.7	3.64	<.001*	47.8		
(R) Nongraduated	241	108.0			52.2		

* Significant at the level of confidence indicated.

at the .001 level of confidence in both samples.

Since the new sample did not replicate Shepherd's, then one's conclusions must be that the two samples are from populations that are different in some important ways. Examination of the difference in procedures in picking the two samples gives some possibilities. First, one interview cases were considered in the replication but not in the Shepherd study. Shepherd accepted counseling done at any time in the student's undergraduate career but only counseling during the first two years was used in the other. The matching procedure was a little different in that those noncounseled students matched with counseled freshmen must have appeared in the student directory for that year. Those matched with sophomores must have appeared in the corresponding student directory. Thus precaution was taken against matching sophomore counselees with noncounseled students who did not even enroll for the second year. The counselors represented by the two samples were different in that Shepherd used all the part-time staff counselors rather than only those meeting certain criteria as in this study. The possible effect of the uncodable cases on the results is treated elsewhere. This may be significant in that Shepherd was able to code a larger proportion of his cases.

For the most part, the influence that the above differences have is unknown. However, the effect of two factors, the uncodable cases and the one-interview cases, can be approximated. Especially in the instance of the one-interview cases, this approximation may be considered to be rather accurate.

To arrive at this approximation, the one-interview cases were compared with the more-than-one-interview cases. Almost one fourth, 120 out of 462, were found to be one-interview cases. No difference was found in the proportion of sophomores in the two groups (Chi-square .041, $P > .80$). When ability between the two groups was considered, the one-interview group was found to have a mean Index of Academic Ability of ~~180.9~~ 108.9 whereas the other group had a mean of 110.7. This difference in means of 1.8 was not significant ($t = -1.20$, $P > .20$). Thus, on these two factors, the two groups can not be considered different. With these two sources of variation ruled out, the noncounseled comparison group becomes more adequate against which to compare the more-than-one-interview group for difference in graduation rate. This comparison yields a difference in graduation rate significant at the .05 level of confidence (Chi-square = 4.69).

In view of the above, it would appear that if one-interview cases had not been considered in this study, the difference in graduation rate between the counseled and non-counseled groups would have been significant. This assumption must be tempered with the realization that this counseled group probably has a spuriously high graduation rate since the graduation rate of the uncodable sample was lower.

Tables 2 through 7 present information on the counseled and noncounseled groups of the Shepherd and Ricksecker groups broken down by sex and academic major.

The Second Hypothesis

The research hypothesis was that there is no difference between the graduation rate of counseled students with one diagnosed problem and that of students with another problem. Inspection first reveals a very similar pattern in the two studies in the proportion of the case load represented by each of the eight categories:

Category	Shepherd Study	Replication	Revised Replication (more-than-one-interview cases)
1 Vocational	72%	71%	73%
2 Emotional	19%	16%	17%
3 Educational	9%	13%	10%
1 Lack of Information About Self	63%	65%	66%
2 Lack of Information About Environment	6%	8%	7%
3 Conflict Within Self	18%	16%	17%
4 Conflict With Others	7%	5%	6%
5 Lack of Skill	5%	6%	4%

along with information on the Shepherd study and the replication, an additional set of information is shown representing only the more-than-one-interview group of cases. This will help determine the influence of the one-interview cases on this part of the study.

Answers to the research hypothesis were sought on three different planes. The Problem dimension and Cause

TABLE 2

A Comparison of the Males in the Ricksecker (R) and Shepherd (S) Studies Indicating Mean Index of Academic Ability (IAA) and Per Cent Graduated of the Counseled-Noncounseled and Graduated-Nongraduated Samples

	N	IAA			Per Cent	Chi Square	P
		Mean	t	P			
Graduated:							
(S) Counseled	124	106.3	0.70	>.10	54.3	9.58	<.01*
(S) Noncounseled	91	108.2			40.0		
(R) Counseled	178	110.5	0.19	>.80	52.7	1.71	>.10
(R) Noncounseled	162	110.3			47.6		
Nongraduated:							
(S) Counseled	104	106.3	0.51	>.10	45.7		
(S) Noncounseled	137	103.8			60.0		
(R) Counseled	160	104.6	-0.65	>.90	47.3		
(R) Noncounseled	178	105.5			52.4		
Counseled:							
(S) Graduated	124	106.3	0.00		54.3		
(S) Nongraduated	104	106.3			45.7		
(R) Graduated	178	110.5	4.10	<.001*	52.7		
(R) Nongraduated	160	104.6			47.3		
Noncounseled:							
(S) Graduated	91	108.2	2.03	>.05	40.0		
(S) Nongraduated	137	103.8			60.0		
(R) Graduated	162	110.3	3.27	<.01*	47.6		
(R) Nongraduated	178	105.5			52.4		

* Significant at the level of confidence indicated.

TABLE 3

A Comparison of the Females in the Ricksecker (R) and Shepherd (S) Studies Indicating Mean Index of Academic Ability (IAA) and Per Cent Graduated of the Counseled-Noncounseled and Graduated-Nongraduated Samples

	N	IAA			Per Cent	Chi Square	P
		Mean	t	P			
Graduated:							
(S) Counseled	25	118.2	0.32	>.10	37.3	1.68	>.05
(S) Noncounseled	18	123.0			26.8		
(R) Counseled	65	117.9	-0.57	>.50	52.4	0.40	>.60
(R) Noncounseled	59	119.3			48.4		
Nongraduated:							
(S) Counseled	42	114.4	0.20	>.10	63.7		
(S) Noncounseled	49	101.2			73.2		
(R) Counseled	59	116.0	0.47	>.60	47.6		
(R) Noncounseled	63	114.9			51.6		
Counseled:							
(S) Graduated	25	118.2	1.52	>.10	37.3		
(S) Nongraduated	42	114.4			62.7		
(R) Graduated	65	117.9	0.81	>.40	52.4		
(R) Nongraduated	59	116.0			47.6		
Noncounseled:							
(S) Graduated	18	123.2	0.33	>.10	26.8		
(S) Nongraduated	49	101.2			73.2		
(R) Graduated	59	119.3	1.86	>.05	48.4		
(R) Nongraduated	63	114.9			51.6		

TABLE 4

A Comparison of Agriculture Students in the Ricksecker (R) and Shepherd (S) Studies Indicating Mean Index of Academic Ability (IAA) and Per Cent Graduated of the Counseled-Noncounseled and Graduated-Nongraduated Samples

	N	IAA					
		Mean	t	P	Per Cent	Chi Square	P
Graduated:							
(S) Counseled	14	101.2	0.85	>.10	46.6	0.00	
(S) Noncounseled	14	104.2			46.6		
(R) Counseled	22	108.0	0.20	>.80	51.2	1.72	>.10
(R) Noncounseled	28	107.3			65.1		
Nongraduated:							
(S) Counseled	16	101.2	0.00		53.4		
(S) Noncounseled	16	101.2			53.4		
(R) Counseled	21	105.9	-0.14	>.80	48.8		
(R) Noncounseled	15	106.5			34.9		
Counseled:							
(S) Graduated	14	101.2	0.00		46.6		
(S) Nongraduated	16	101.2			53.4		
(R) Graduated	22	108.0	0.54	>.50	51.2		
(R) Nongraduated	21	105.9			48.8		
Noncounseled:							
(S) Graduated	14	104.2	0.08	>.10	46.6		
(S) Nongraduated	16	101.2			53.4		
(R) Graduated	28	107.3	0.18	>.80	65.1		
(R) Nongraduated	15	106.5			34.9		

TABLE 5

A Comparison of Arts & Science Students in the Ricksecker (R) and Shepherd (S) Studies Indicating Mean Index of Academic Ability (IAA) and Per Cent Graduated of the Counseled-Noncounseled and Graduated-Nongraduated Samples

	N	IAA			Per Cent	Chi Square	P
		Mean	t	P			
Graduated:							
(S) Counseled	81	112.5	0.84	>.10	49.3	4.29	<.05*
(S) Noncounseled	63	115.2			38.4		
(R) Counseled	135	112.8	-0.37	>.70	51.7	2.93	>.05
(R) Noncounseled	115	113.6			44.2		
Nongraduated:							
(S) Counseled	83	110.0	1.33	>.10	50.7		
(S) Noncounseled	101	107.4			61.6		
(R) Counseled	126	108.7	-0.30	>.70	48.3		
(R) Noncounseled	145	109.2			55.8		
Counseled:							
(S) Graduated	81	112.5	0.91	>.10	49.3		
(S) Nongraduated	83	110.0			50.7		
(R) Graduated	135	112.8	2.10	<.05*	51.7		
(R) Nongraduated	126	108.7			48.3		
Noncounseled:							
(S) Graduated	63	115.2	0.81	>.10	38.4		
(S) Nongraduated	101	107.4			61.6		
(R) Graduated	115	113.6	2.45	<.02*	51.7		
(R) Nongraduated	145	109.2			55.8		

* Significant at the level of confidence indicated.

TABLE 6

A Comparison of Education Students in the Ricksecker (R) and Shepherd (S) Studies Indicating Mean Index of Academic Ability (IAA) and Per Cent Graduated of the Counseled-Noncounseled and Graduated-Nongraduated Samples

	N	IAA			Per Cent	Chi Square	P
		Mean	t	P			
Graduated:							
(S) Counseled	6	108.0	1.59	>.10	31.6	0.55	<.50
(S) Noncounseled	4	115.5			21.0		
(R) Counseled	17	114.8	-0.65	>.50	48.6	0.68	<.30
(R) Noncounseled	21	117.6			58.3		
Nongraduated:							
(S) Counseled	13	110.3	0.07	>.10	68.4		
(S) Noncounseled	15	108.7			79.0		
(R) Counseled	18	112.6	1.23	>.20	51.4		
(R) Noncounseled	15	107.0			41.7		
Counseled:							
(S) Graduated	6	108.0	0.19	>.10	31.6		
(S) Nongraduated	13	110.3			68.4		
(R) Graduated	17	114.8	0.48	>.60	48.6		
(R) Nongraduated	18	112.6			51.4		
Noncounseled:							
(S) Graduated	4	115.5	0.15	>.10	21.0		
(S) Nongraduated	15	108.7			79.0		
(R) Graduated	21	117.6	2.50	<.02*	58.3		
(R) Nongraduated	15	107.0			41.7		

* Significant at the level of confidence indicated.

TABLE 7

A Comparison of Engineering Students in the Ricksecker (R) and Shepherd (S) Studies Indicating Mean Index of Academic Ability (IAA) and Per Cent Graduated of the Counseled-Noncounseled and Graduated-Nongraduated Samples

	N	IAA			Per Cent	Chi Square	P
		Mean	t	P			
Graduated:							
(S) Counseled	46	103.0	0.52	$>.10$	58.9	9.29	$<.01$*
(S) Noncounseled	27	100.1			34.6		
(R) Counseled	64	111.4	-0.24	$>.80$	55.7	2.73	$>.05$
(R) Noncounseled	51	112.0			44.7		
Nongraduated:							
(S) Counseled	32	105.7	0.11	$>.10$	41.1		
(S) Noncounseled	51	109.1			65.4		
(R) Counseled	51	104.2	-0.65	$>.50$	44.3		
(R) Noncounseled	63	105.7			55.3		
Counseled:							
(S) Graduated	46	103.0	0.43	$>.10$	58.9		
(S) Nongraduated	32	105.7			41.1		
(R) Graduated	64	111.4	3.05	$<.01$*	55.7		
(R) Nongraduated	51	104.2			44.3		
Noncounseled:							
(S) Graduated	27	100.1	1.81	$>.05$	34.6		
(S) Nongraduated	51	109.1			65.4		
(R) Graduated	51	112.0	2.67	$<.01$*	44.7		
(R) Nongraduated	63	105.7			55.3		

* Significant at the level of confidence indicated.

dimension were treated separately. The third plane utilized the individual codes which represented a sufficiently large N.

Table 8 presents the graduation rate of each category and usable code along with the results of a test of significance of the difference in graduation rate within each plane. Again the more-than-one-interview information is presented with the Shepherd study and the replication. In the Shepherd study, eight codes had a sufficiently large N for analysis. Nine codes were included in the replication.

Table 9 presents information on the ability difference between the counseled and noncounseled groups for the two samples. It can be easily noted that while Shepherd found consistently insignificant differences in ability between his counseled and noncounseled groups, there are a number of differences significant at the .05 level of confidence in the replication sample.

Shepherd compared ability, for graduated and non-graduated students combined, and graduation rate by cell for the three cells with the greatest number of clients. These were codes 1 (Voc) - 1 (LIS), 1 (Voc) - 2 (LIE), and 2 (Em) - 3 (CS). He found a significant difference in ability only between the 1-1 and 2-3 codes but a significant difference in graduation rate for all three combinations. In the replication, no significant difference in ability or graduation rate was found in any of the three combinations.

TABLE 8

Per Cent Graduated for Code and Category Diagnoses of the Shepherd, Replication, and Revised Replication Samples

	Shepherd Study				Replication				Revised Replication (more-than-one-interview)			
Category	N	Grad	Chi-square	P	N	Grad	Chi-square	P	N	Grad	Chi-square	P
1 (Voc)	211	57%	11.61	<.01*	329	57%	9.54	<.01*	251	59%	4.55	>.10
2 (Em)	57	32%			72	40%			58	45%		
3 (Ed)	27	52%			61	43%			33	48%		
1 (LIE)	187	54%	16.41	<.01*	301	56%	5.75	>.20	227	59%	5.57	>.20
2 (LIS)	18	89%			35	57%			25	60%		
3 (CS)	53	38%			74	45%			57	46%		
4 (CO)	21	43%			25	40%			20	40%		
5 (LS)	16	46%			27	44%			13	54%		
1-1	177	52%	23.28	<.01*	274	57%	20.03	<.02*	211	59%	17.55	<.05*
1-2	18	89%			34	56%			25	60%		
1-3	9	89%			12	50%			8	38%		
1-4	6	50%			9	78%			7	71%		
2-3	41	29%			53	49%			43	53%		
2-4	14	36%			14	14%			11	18%		
3-1	8	87%			22	50%			12	67%		
3-3					9	11%			6	0%		
3-5	15	46%			27	44%			13	54%		
Total	295	51%			462	53%			342	56%		

* Significant at the level of confidence indicated.

TABLE 9

Mean Index of Academic Ability (IAA) for Code and Category Diagnoses for Graduated and Nongraduated Groups in the Shepherd and Replication Samples

	Shepherd Study				Replication			
Category	Mean IAA		t	P	Mean IAA		t	P
	Grad	Nongrad			Grad	Nongrad		
1 (Voc)	101.5	101.3	0.05	>.10	112.5	108.0	2.95	<.01*
2 (Em)	100.7	98.8	0.06	>.10	118.4	108.9	2.71	<.01*
3 (Ed)	102.8	102.4	0.00	>.10	105.8	104.7	0.34	>.70
1 (LIS)	94.6	94.5	0.01	>.10	112.8	107.4	3.58	<.01*
2 (LIE)	105.9	102.4	0.02	>.10	110.6	105.8	0.91	>.30
3 (CS)	109.9	107.6	0.21	>.10	114.5	109.4	1.43	>.10
4 (CO)	93.3	93.1	0.01	>.10	114.6	110.3	0.69	>.40
5 (LS)	111.4	109.3	0.08	>.10	103.8	104.5	-0.13	>.90
1-1	95.0	93.8	1.63	>.10	112.9	108.1	2.98	<.01*
1-2	105.9	102.4	0.04	>.10	111.8	105.8	1.16	>.20
1-3	103.5	100.6	0.01	>.10				
1-4	101.6	103.3	0.01	>.10				
2-3	116.3	114.7	0.05	>.10	117.5	108.4	2.25	<.05*
2-4	85.1	82.9	0.08	>.10	130.5	111.7	1.65	>.10
3-1	94.2	95.1	0.00	>.10	112.0	101.5	2.08	>.05
3-5	111.4	109.3	0.02	>.10	103.8	104.5	-0.13	>.90

* Significant at the level of confidence indicated.

Examination of the other codes in the replication revealed only that the students in the code 3 (Ed) - 5 (LS) had significantly less ability than those in 1-1, 2-3 or 2 (Em) - 4 (CO) and that 2-4 presented a significantly lower graduation rate than 1-1,1-2, 2-3, and 3 (Ed) - 1 (LIS). None of the other differences were significant.

Conclusions

The Shepherd conclusion, that providing counseling to students when they request it assists them in graduating from college, is neither strongly supported nor contradicted by this replication. The difference in graduation rate between counseled and noncounseled students is not significant at the .05 level of confidence in this replication. However, when the one-interview cases were removed from the sample, as they were in the Shepherd study, the difference is significant. The conclusion seemingly rests with whether one considers one-interview cases to legitimately represent counseling.

The conclusion that graduation rate of counseled students varies according to the kind of problem which is developed in counseling is supported by this replication.

The Borresen Study

Two of the three questions Borresen (1964, p.6) dealt with were treated in this Replication:

1. Under standard operational conditions of the University of Missouri Testing and Counseling Service, do counselors differ from each other in the frequency with which they use certain diagnostic classifications to describe the problems of their clients?
2. Within the limits of data availble, what is the nature and structure of counselor bias?

Question One

The Borresen Samples. These are described as follows (Borresen, 1964, pp. 10-11):

> Counselor Sample
>
> The first counselor sample (Sample A) for this portion of the study was for the 1960-61 academic year, and included all six staff counselors working half time or more at the University of Missouri Testing and Counseling Service, plus the students enrolled in the practicum class for that same period of time. The second counselor sample (Sample B) was for the 1961-62 academic year, and included all ten staff counselors working half time or more at the University of Missouri Testing and Counseling Service, plus the students enrolled in the practicum class for that same period of time. Staff counselors are doctoral candidates majoring in counseling who have successfully completed a supervised practicum in counseling. practicum students were assigned clients in a manner similar to that for staff counselors. However, they were assigned only clients that were self-referrals.
>
> Client Sample
>
> The first client sample (Sample A) includes the 542 clients seen by the six counselors from September 1, 1960, through May 31, 1961, plus the 201 clients seen by the practicum group for that period. This was the entire counseling load for this period for the counselors involved. The second client sample (Sample B) includes the 622

> clients seen by the ten counselors during the period from September 1, 1961, through May 31, 1962, plus the 115 clients seen by the practicum group for that same period. Again, this was the entire counseling load for the period for the counselors involved.

The Replication Samples. This includes the 13 counselors and 471 counselees previously described.

A comparison of the Borresen and replication samples will reveal the similarities and differences between the two. One difference which should be pointed out is that the diagnostic codes in the Borresen study were assigned by the counselor, rather than by judges using the counselor's notes.

Procedure. In treating the first question, Borresen tested the significance of difference between criterion and counselor distributions for each counselor on three sets of distributions. The replication tested only the two dimension distributions. The third, the code distribution, was not run because of an insufficient N in all but two of the codes.

The criterion distribution in each case was the composite distribution of all counselors except the one being tested. In order to ascertain the comparability among counselors of the results, analyses were made to determine whether there were significant differences among the criterion distributions used for each counselor.

Results. No significant differences among criterion distributions were found for any Borresen sample or for the replication samples. The results are summarized in Table 10. Thus it is possible to assume a stable and generalizable criterion against which each counselor was compared within each sample.

The tests of significance of differences in the use of dimensional categories for the six staff counselors and one practicum group in Borresen's Sample A indicate that four of the six counselors differ from their own criterion group on at least one of the two dimensions at the .001 level of confidence. Two differ on both categories at the .001 level of confidence. The results for the ten staff counselors and one practicum group in Sample B show that six of the ten counselors differ from their own criterion group on at least one of the two dimensions at the .01 level of confidence. The results for the 13 counselors in the replication are presented in Table 11. Five of the thirteen counselors differ from their own criterion group on at least one of the two dimensions at the .05 level of confidence.

Results of the Borresen study indicate, and this study supports, that bias of some sort has been in effect. This produced significant differences among the distributions by dimensional categories for the case load of individual counselors. It was not within the scope of this study to consider any but the standard operational procedure of the Testing and Counseling Service. However, Borresen did find essentially the same bias under conditions of controlled

TABLE 10

Homogeneity of the Criterion Dimensional Distributions (Composite of All Other Counselors) Against Which Each Counselor's Distribution Was Tested

Sample	Problem Dimension			Cause Dimension		
	Chi-square	df	P	Chi-square	df	P
Borresen (A)	8.20	12	>.70	20.92	24	>.50
Borresen (B)	9.25	20	>.95	20.08	40	>.90
Borresen (AB)	35.23	34	>.20	82.87	68	>.20
Ricksecker	4.56	24	>.99	6.82	48	>.99

TABLE 11

Difference Between Each Counselor and His Criterion (All Other Counselors) in the Use of Categories Within Each Dimension and in Both Combined

Counselor	N	Dimension	Chi-square	df	P
1	22	Problem	2.297	2	>.30
		Cause	4.296	4	>.30
		Total	6.593	6	>.30
2	21	Problem	3.165	2	>.20
		Cause	6.361	4	>.10
		Total	9.526	6	>.10
3	78	Problem	16.724	2	<.001*
		Cause	13.854	4	<.01*
		Total	20.578	6	<.01*
4	31	Problem	0.015	2	>.90
		Cause	0.751	4	>.90
		Total	0.766	6	>.99
5	68	Problem	0.205	2	>.90
		Cause	4.031	4	>.30
		Total	4.236	6	>.50
6	29	Problem	0.458	2	>.70
		Cause	11.556	4	<.05*
		Total	12.014	6	>.05
7	45	Problem	1.830	2	>.30
		Cause	5.948	4	>.20
		Total	7.778	6	>.20
8	42	Problem	7.108	2	<.05*
		Cause	10.522	4	<.05*
		Total	17.630	6	<.01*
9	26	Problem	0.824	2	>.50
		Cause	2.010	4	>.70
		Total	2.834	6	>.80
10	45	Problem	10.679	2	<.01*
		Cause	13.154	4	<.02*
		Total	23.833	6	<.001*
12	16	Problem	6.820	2	<.05*
		Cause	4.932	4	>.20
		Total	11.752	6	>.05
13	23	Problem	3.674	2	>.10
		Cause	5.472	4	>.20
		Total	9.146	6	>.10
14	25	Problem	3.319	2	>.10
		Cause	5.956	4	>.20
		Total	9.275	6	>.10

* Significant at the level of confidence indicated.

random assignment of clients to counselors.

Percentage deviation from the criterion for each counselor in this study is presented in Figure 1. By inspection of this, the reader can determine direction and amount of deviation on dimensional categories for each individual counselor.

Question Two

Once the existance of counselor bias was established, the next task was to attempt to determine the nature and structure of this bias.

Sample. Borresen used two samples in studying this question. One, Sample AB, was a combination of the two samples previously described. The other, Sample X, included five counselors on the staff of the Testing and Counseling Service for the Winter Semester 1962-63 academic year. The replication sample remained the same as that for Question One.

Procedure. Borresen formed frequency distributions for each counselor of his clients' diagnostic codes. The codes were then ranked according to frequency. Kendall's Tau Coefficient for tied ranks was computed between all possible pairs of counselors in each of the two samples. A multiple factor analysis was run on the Tau Correlation Matrix. To provide additional information and to check on the factor structure arrived at by factor analysis, a cluster analysis was also run using McQuitty's Elementary Linkage-

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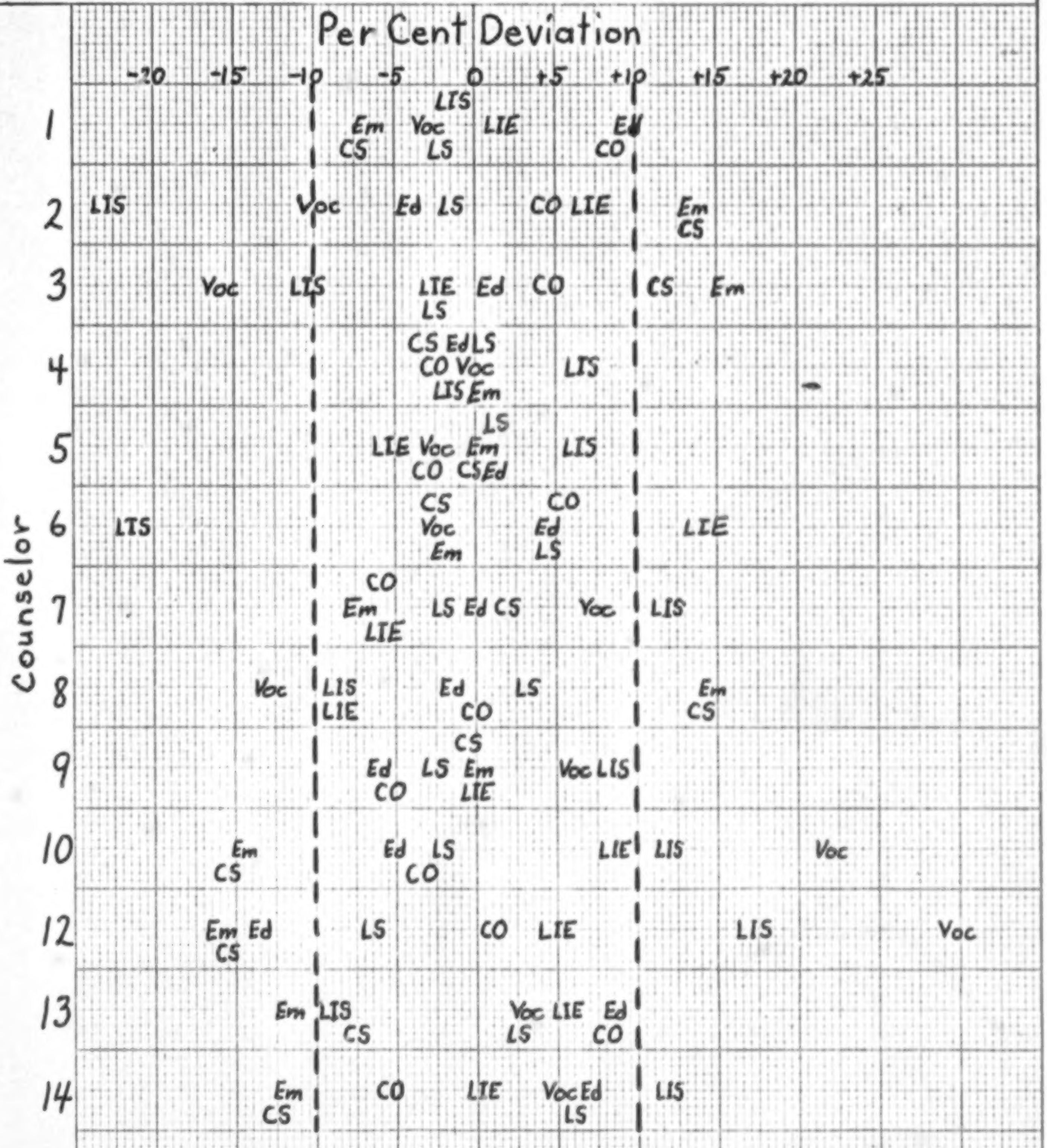

Fig. 1. Per cent deviation from criterion by category for counselors in the *replication* sample.

Analysis (McQuitty, 1957). When factors and clusters had been extracted for each sample, those counselors common to both a factor and a cluster were combined into a counselor-cluster. Each counselor-cluster was described in terms of the common deviations of the counselors from their criterion on the dimensional categories. This provided a description of the diagnostic bias common to the counselors within each counselor-cluster.

The procedure used in this replication was the same except for the formation of the correlation matrix. Here, the results of the frequency distribution were converted into proportions of the counselor's case load represented by each code. Product-moment correlation coefficients were then derived between each pair of counselors. A correlation matrix (Table 12) was formed with the results. This procedure was adopted because it was thought to be more sensitive since both rank and degree influence the coefficients.

In the replication, the IBM 1620 Digital Computer was used in the factor analysis. The _Centroid Factor Analysis Program_ of the University of Missouri Computer Research Center was used to find the correlation matrix, factor loadings, and residuals. The rotation of the factors was done by _Varimax Rotation (1620 Users Group Program 06.0.094)_.

TABLE 12

Inter-correlation Matrix on Problem Distributions of Counselors

		Counselor												
		1	2	3	4	5	6	7	8	9	10	12	13	14
Counselor	1		781*	858	948	953	883	938	840	944	977	981	985	965
	2	781		923	904	876	858	878	919	908	854	837	804	849
	3	858	923		964	955	825	932	973	966	880	887	846	907
	4	948	904	964		994	887	982	958	997	969	966	941	982
	5	953	876	955	994		871	982	958	992	966	965	943	980
	6	883	858	825	887	871		845	799	896	918	914	923	905
	7	938	878	932	982	982	845		937	978	962	960	920	974
	8	840	919	973	958	958	799	937		956	880	873	843	909
	9	944	908	966	997	992	896	978	956		969	968	940	975
	10	977	854	880	969	966	918	962	880	969		994	979	980
	12	981	837	887	966	965	914	960	873	968	994		976	972
	13	985	804	846	941	943	923	920	843	940	979	976		964
	14	965	849	907	982	980	905	974	909	975	980	972	964	

* Each number should be read as having a decimal preceding the number, i.e. .781, .858, etc.

Results. In Sample AB, Borresen found four clusters and three factors. All the counselors in two of the clusters were found in one factor. Since the counselors in these two clusters followed the same general pattern, the clusters could not be described as different.

Borresen's Sample X yielded two factors and two clusters. Since the factors and clusters contained the same counselors, two counselor-clusters were formed.

Analysis of the replication sample produced two factors and four clusters. The composition of the clusters was as follows: Cluster I contained Counselors 1, 6 and 13; Cluster II contained Counselors 10 and 12; Cluster III contained Counselors 2, 3 and 8; and Cluster IV contained Counselors 4, 5, 7, 9 and 14. Factor A was composed of counselors in Clusters I and II. Factor B was composed of those in Clusters III and IV. The one exception was Counselor 14 who appeared in Factor A but also in Cluster IV and was therefore not included in this part of the study.

Table 13 describes the composition of the various clusters of the Borresen and replication samples. Figure 2 shows the deviations.

Factor-cluster A, which is Clusters I and II combined as in the derived factor, and Factor-cluster B, which is Clusters III and IV, were also examined in relation to each other. Tests of significance of difference between the two Factor-clusters in the proportion of the case load represented

TABLE 13

Composition of the Counselor-clusters in the Borresen and Replication Samples

Sample	Counselor-cluster	Emphasized Categories	De-emphasized Categories
Borresen (AB)	A-II	1 (LIS)	2 (LIE)
	B-III	2 (LIE)	2 (Em) 3 (CS)
	D-I	2 (Em) 3 (CS)	3 (Ed)
	D-IV	2 (Em) 3 (CS)	3 (Ed)
Borresen (X)	A-I	3 (Ed)	1 (Voc 2 (Em) 3 (CS)
	B-II	2 (Em) 3 (CS)	1 (LIS) 2 (LIE)
Replication	I		1 (LIS)
	II	1 (Voc) 1 (LIS)	2 (Em) 3 (CS)
	III	2 (Em) 3 (CS)	1 (Voc) 1 (LIS)
	IV	1 (LIS)	

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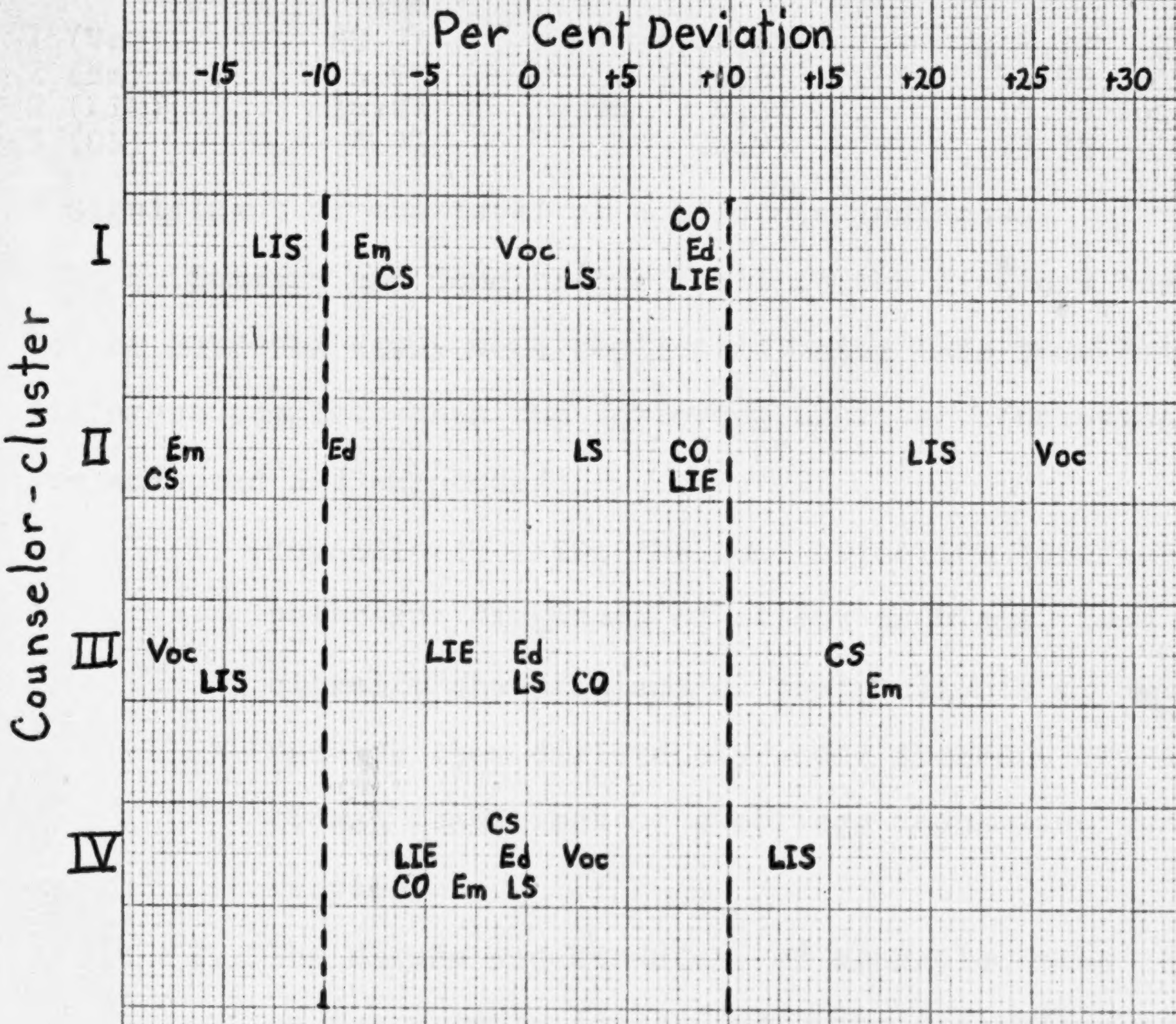

Fig. 2. Per cent deviation from criterion by category for counselor-clusters. in the replication sample.

by each category yield the following results:

Category	Factor-cluster A	Factor-cluster B	Chi-square	P
1 (Voc)	80.7%	66.6%	9.17	<.01
2 (Em)	5.9%	20.6%	14.93	<.001*
2 (LIE)	14.8%	4.5%	15.58	<.001*
3 (CS)	6.7%	20.9%	13.78	<.001*

* Significant at the level of confidence indicated.

Summary and Conclusions. All of the findings basic to the Borresen study were replicated using this somewhat different sample. Thus the following Borresen conclusions are accepted and supported:

1. Counselors, using the same objective reference point for diagnosis of client problems, tend to classify the problems of their clients or develop them differently under standard operational conditions of a college counseling service.
2. The nature and structure of counselor bias can be tentatively identified. The dimensions of counselor bias seem to include an affective-cognitive dimension and a motivational conflict-lack of information dimension.

The Johnson Study

Johnson (1963) investigated two samples for a possible relationship between length of counseling and success in counseling in selected kinds of cases. He tested the following null hypotheses:

1. There is no relationship between number of interviews and success for all diagnoses combined.
2. There is no difference between male and female clients in terms of number of interviews.
3. There is no relationship between number of interviews and success in counseling for:
    a. 1-1's (Vocational--Lack of Information About Self)
    b. 2-3's and 2-4's (Emotional--Conflict with Self, and Emotional--Conflict With Others)

Samples

Johnson Sample 1. This was composed of that part of Shepherd's sample which had been diagnosed 1-1, 2-3, or 2-4. Since this sample has been described previously, it will not be repeated here.

Johnson Sample 2. This was a new sample drawn from the files of the University Testing and Counseling Service using almost the same criteria as Shepherd. The only differences were: (1) Freshmen during 1958-59 or 1959-60; (2) One interview cases were allowed; (3) Only 1-1, 2-3 and

2-4 cases were considered; (4) The codes were assigned as a standard part of the staff counselor's responsibility in closing a case, rather than by judges.

Replication Sample. This was composed of the 347 cases which were diagnosed 1 (Voc) - 1 (LIS), 2 (Em) - 3 (CS), or 2 (Em) - 4 (CO). All 13 counselors were represented.

Results

The chi-square test of independence was used to test the three hypotheses. The results for the three samples on the three hypotheses are presented in Table 14. One notes a considerable lack of similarity. In testing Hypothesis 1, Johnson found no significant relationship between number of interviews and success for all diagnoses combined while significance at the .02 level of confidence was found in the replication. Results contradictory to those of Johnson were also found in testing both parts of Hypothesis 3.

Possibly the most intriguing of the Johnson findings were "failure" zones which appeared in the distributions of both 2-3 and 2-4 groups. Figure 3 illustrates this. Figure 4 presents the replication distribution of 2-3 and 2-4 cases. Although there is no clear-cut "failure" zone, there seems to be a sufficient dip in graduation rate for the six-and seven-interview cases to warrant further exploration.

It was noted that the "failure" zone did not appear in exactly the same place in each of the Johnson samples. It would, therefore, seem possible to mask the results by

TABLE 14

Relationship of Number of Interviews to (1) Success for All Diagnoses Combined, to (2) Proportion of Male and Female Clients, to (3a) Success for 1 (Voc) - 1 (LIS) Cases, and to (3b) Success for 2 (Em) - 3 (CS) and 2 (Em) - 4 (CO) Cases

Hypothesis	Sample	Chi-square	df	P
1	Johnson #1	3.86		>.20
	Johnson #2	1.74		>.50
	Replication	16.02	6	<.02*
2	Johnson #1	6.07		<.05*
	Johnson #2	0.77		>.70
	Replication	15.01	7	<.05*
3a	Johnson #1	1.81		>.50
	Johnson #2	1.44		>.50
	Replication	13.35	4	<.01*
3b	Johnson #1	11.85		<.01*
	Johnson #2	7.04		<.05*
	Replication	0.61	3	>.80

* Significant at the level of confidence indicated.

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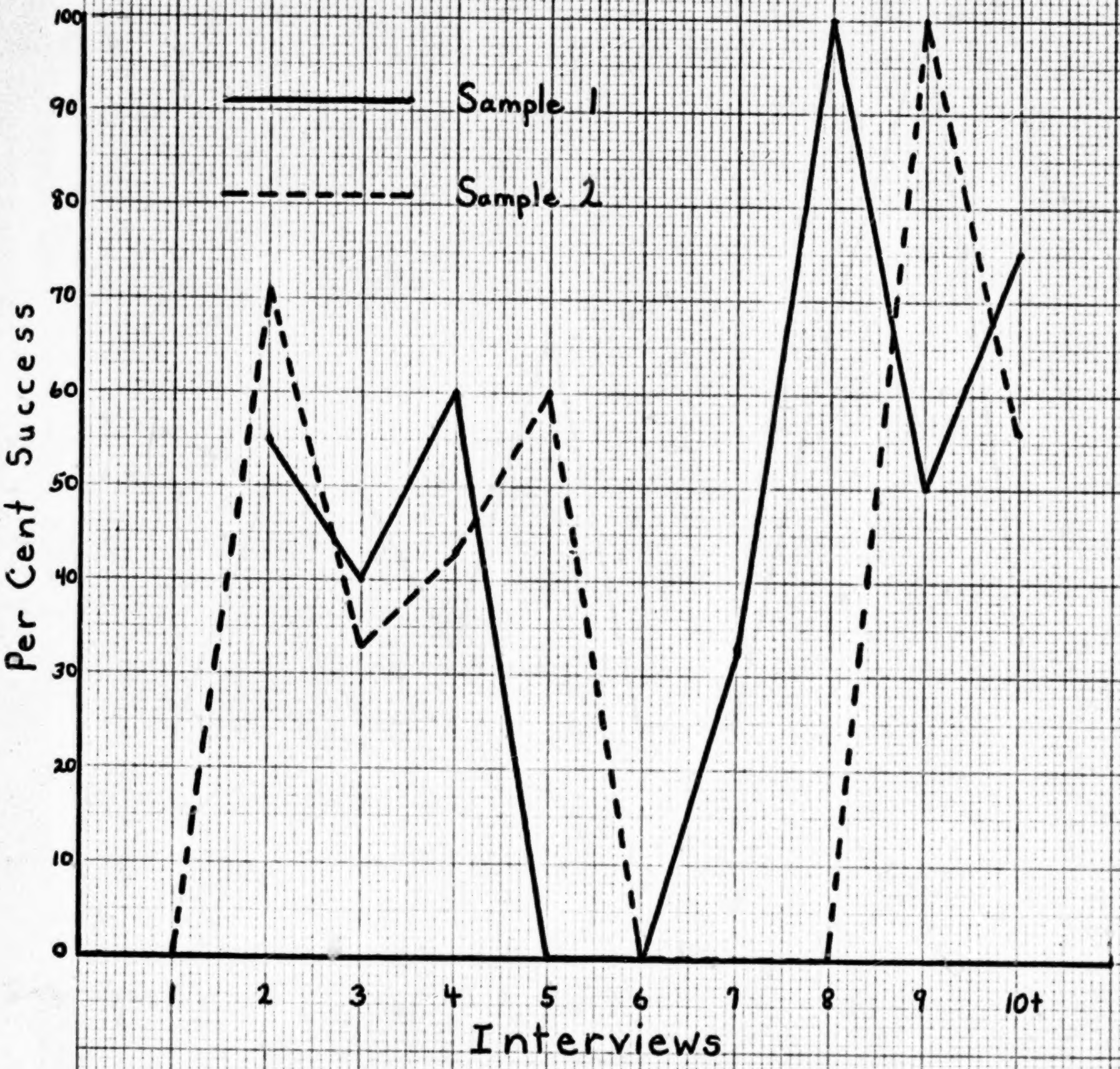

Fig. 3. Success by interview for 2-3 and 2-4 cases in the Johnson samples.

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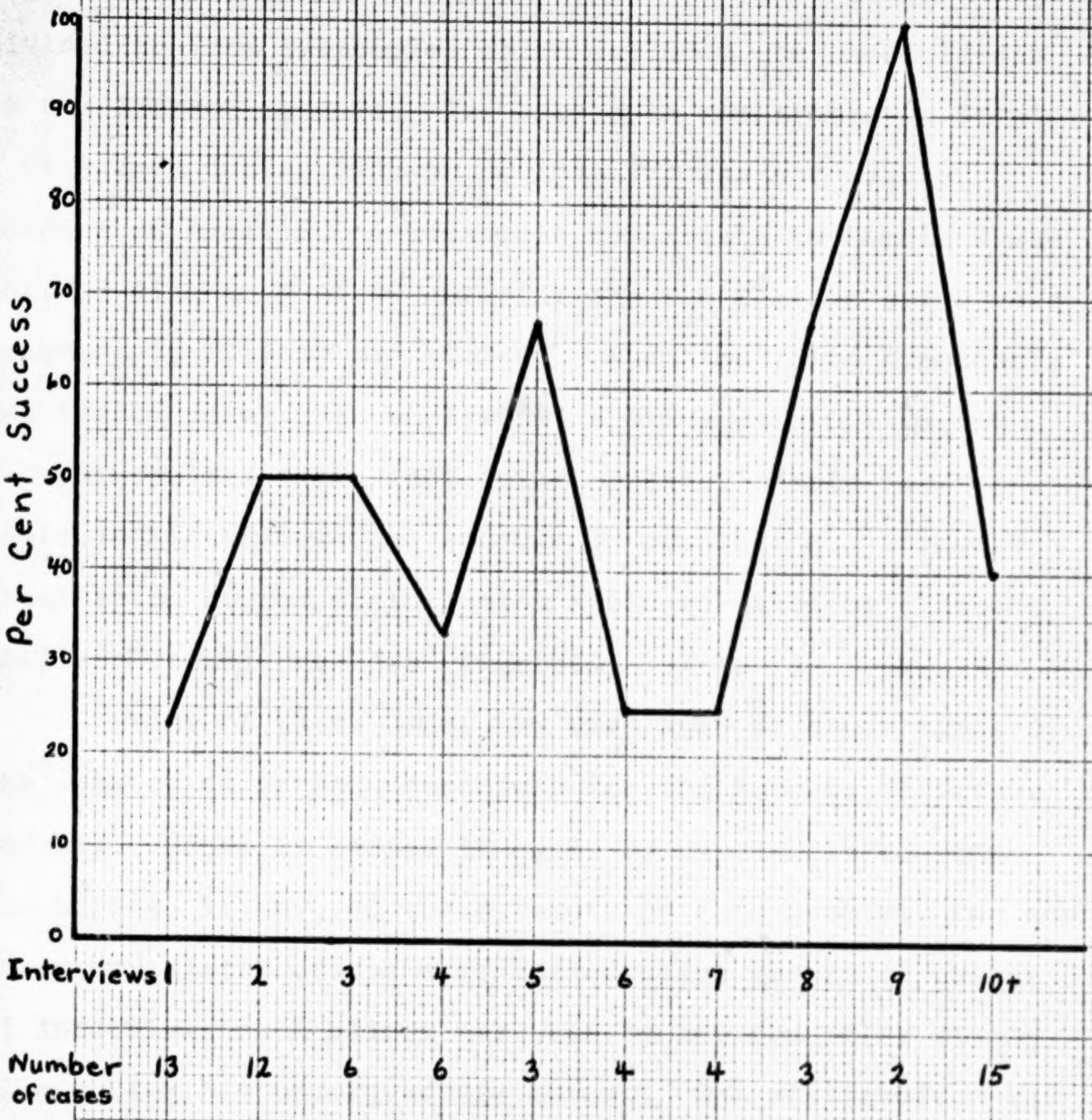

Fig. 4. Success by interview for 2-3 and 2-4 cases in the Replication Sample.

putting too many classes together. In order to make the sample more comparable to the Johnson samples, it was divided to form subsamples which included the same classes as the Johnson samples. The subsample comparable to Sample 1 (freshmen during 1955-56 or 1956-57) was not usable because of small N. A subsample comparable to Sample 2 was derived with an N of 44 covering the two classes which were freshmen in 1958-59 and 1959-60. When the third hypothesis was tested using this subsample, a chi-square of .24 and P >.98 resulted again indicating no relationship between number of interviews and success in counseling. Although examination of the distribution again revealed no clearcut "failure" zone, the "dip" remained.

Many of these cases had been seen at other times by the same or different counselors for the same or different reasons. Since it seemed it could be worthwhile to study the effect, if any, of these reacts on this problem, two new frequency distributions were formed using the total number of interviews each client was seen by any counselor at any time during his undergraduate career. One distribution was for the total sample and the other covered the 1958-59 and 1959-60 classes. While neither of these distributions revealed clear "failure" zones either, they both contained the same "dip" characteristic of the uncorrected samples.

Conclusions

This replication does not support the following Johnson conclusions:

1. There is no relationship between number of counseling interviews and success in counseling when heterogeneous groups of client problems are considered.
2. There is no relationship between number of counseling interviews and success in counseling for client problems diagnosed on 1-1.
3. A significant relationship between number of counseling interviews and success in counseling exists for client problems diagnosed as 2-3 and 2-4.
4. A critical point in counseling emotional problems appears between the fifth and eighth interviews as evidenced by a failure zone in this portion of the distribution of successes by number of interviews.

The data pertinent to the first three conclusions are contradictory to the Johnson findings. That dealing with the fourth conclusion merely does not lend significant support.

CHAPTER IV

THE COUNSELOR VARIABLE IN CLIENT SUCCESS

Problem I

The statistical hypothesis proposed was that there is no difference between the client graduation rate of each counselor and that of all other counselors combined.

Procedure

As could be expected, there was found to be a significant difference between the graduation rates of those students counseled as freshmen and those counseled while sophomores (Chi-square = 12.90, df = 1, $P < .001$). It was also discovered that the proportions of freshmen and sophomores in each counselor's case load varied significantly among the counselors (Chi-square = 41.33, df = 12, $P < .001$). Therefore, in testing the hypothesis each counselor's expected graduation rate was corrected for proportion of each class found in his client case load.

Table 15 gives the data used to test this hypothesis for each counselor. Separate criteria were obtained for each class. The criterion in each case represents the graduation rate of all other counselors. This criterion proportion multiplied by the number of clients of that class represented in the counselor's case load gave the expected

TABLE 15

The Difference Between the Client Graduation Rate of Each Counselor and All Other Counselors Combined with Data for Computation of Chi-squares While Controlling for Difference in Proportion of Each Counselor's Case Load

Co.	Freshman Criterion Grad/Total	 Couns N	Sophomore Criterion Grad/Total	 Couns N	Expected Grad Fresh E	 Soph E	 Total E	Graduated O	Chi-square (df = 1)	P
1	159/326	20	82/123	2	9.755	1.333	11.088	7	3.039	>.05
2	158/332	14	80/118	7	6.663	4.746	13.326	10	2.272	>.10
3	139/302	44	61/ 91	34	20.252	22.791	50.717	48	0.417	>.50
4	154/319	27	79/121	4	13.034	2.612	15.646	15	0.054	>.80
5	147/296	50	73/107	18	24.831	12.280	37.111	28	4.924	<.05*
6	150/317	29	83/125	0	13.722	0.000	13.722	15	0.226	>.50
7	152/312	34	74/114	11	16.564	7.140	23.704	22	0.258	>.50
8	152/321	25	72/108	17	11.838	11.333	23.171	24	0.066	>.70
9	149/321	25	83/124	1	11.604	.669	12.273	16	2.144	>.10
10	147/316	30	73/110	15	13.956	9.954	23.910	28	1.493	>.20
12	163/334	12	82/121	4	5.856	2.711	8.567	3	7.787	<.01*
13	155/329	17	77/119	6	8.009	3.882	11.891	16	2.940	>.05
14	155/327	19	77/119	6	9.006	3.882	12.888	16	1.551	>.20

* Significant at the level of confidence indicated.

graduation frequency for that class. In the case of Counselor 1, multiplication of his freshman criterion, 159/326, by the number of freshmen in his case load, 20, gave the expected graduation frequency for his freshman clients, 9.755. Addition of the expected freshman frequencies and the expected sophomore frequencies gave the expected graduated frequencies used in the chi-square test.

Results

Inspection of Table 15 reveals that the client-graduation rates for two counselors, Counselor 5 and Counselor 12, were significantly different from the criterion at the .05 level of confidence. In both cases their clients graduated significantly less frequently than is expected.

Problem II

The statistical hypothesis proposed was that within each diagnostic category, there is no difference between the client graduation rate of each counselor and the average rate of all other counselors combined.

Procedure

The hypothesis was tested for each counselor using a test of difference in proportions of a single sample from the population value (Johnson & Jackson, 1959, pp. 98-103):

$$z = \frac{P_1 - P_2}{\sqrt{\frac{P_2 \quad q}{k}}}$$

In this test, P_1 was the counselor's client-graduation rate, P_2 was the criterion client-graduation rate, q was $1 - P_2$, and k was the size of the counselor's sample. Results are in the form of a normal deviate.

As in testing the first hypothesis, the difference in graduation rate between freshman and sophomore counselees was taken into account. This was done on the same principle as that with chi-square. However, rather than adjusting expected frequencies, the criterion graduation proportion of each class was found. P_2 was then the mean of the proportions weighted according to the proportion of the counselor's case load which was in each class. The data for the derivation of P_2 for each counselor on each category are found in Tables 16 through 23.

Results

The results are given also in Tables 16 through 23. The only significant differences in proportions were with Counselors 5, 12, and 13 and on categories Vocational, Lack of Information about Self, and Lack of Skill.

Problem III

The statistical hypothesis proposed was that any difference in client-graduation rate is not related to counselor diagnostic bias. This was tested on three planes: (1) comparison among individual counselors, (2) comparison

TABLE 16

Difference Within the Vocational Category Between Counselor Client-Graduation Rate (P_1) and Criterion Client-Graduation Rate (P_2) with Data for Obtaining P_2

Co.	Couns P_1	Freshman		Sophomore		Criterion P_2	z	P
		Crit P	Couns N	Crit P	Couns N			
1	.3333	.5526	14	.6630	1	.5600	-1.770	>.05
2	.4615	.5365	9	.6854	4	.5823	-0.883	>.30
3	.7111	.5229	24	.6389	21	.5770	1.822	>.05
4	.5455	.5426	19	.6556	3	.5580	-0.118	>.90
5	.4043	.5604	35	.7037	12	.5970	-2.695	<.01*
6	.6500	.5270	20		0	.5270	1.102	>.20
7	.4857	.5556	26	.6548	9	.5811	-1.144	>.20
8	.6800	.5259	10	.6795	15	.6181	0.637	>.50
9	.6500	.5247	19	.6739	1	.5322	1.056	>.20
10	.6585	.5234	28	.6625	13	.5675	1.176	>.20
12	.1875	.5565	12	.6854	4	.5887	-3.262	<.01*
13	.8235	.5261	12	.6477	5	.5619	2.175	<.05*
14	.7368	.5307	14	.6477	5	.5615	1.540	>.10

* Significant at the level of confidence indicated.

TABLE 17

Difference Within the Emotional Category Between Counselor Client-Graduation Rate (P_1) and Criterion Client-Graduation Rate (P_2) with Data for Obtaining P_2

Co.	Couns	Freshman		Sophomore		Criterion	z	P
	P_1	Crit P	Couns N	Crit P	Couns N	P_2		
1	.5000	.2857	2		0	.2857	0.671	>.50
2	.5000	.2917	3	.6316	3	.4616	0.189	>.80
3	.5000	.2250	11	.8182	11	.5216	0.203	>.80
4	.2000	.3191	4	.6190	1	.4690	-1.205	>.20
5	.3636	.3182	7	.6111	4	.4247	-0.410	>.60
6	.2500	.2979	4		0	.2979	-0.209	>.80
7	.2500	.3125	3	.6190	1	.3891	-0.571	>.50
8	.4167	.2927	10	.6000	2	.3439	0.531	>.50
9	.5000	.2766	4		0	.2766	0.999	>.30
10	.0000	.3000	1		0	.3000	-0.653	>.50
12			0		0			
13	.0000	.3000	1		0	.3000	-0.653	>.50
14	.0000	.3000	1		0	.3000	-0.653	>.50

TABLE 18

Difference Within the Educational Category Between Counselor Client-Graduation Rate (P_1) and Criterion Client-Graduation Rate (P_2) with Data for Obtaining P_2

Co.	Couns P_1	Freshman		Sophomore		Criterion P_2	z	P
		Crit P	Couns N	Crit P	Couns N			
1	.2000	.3878	4	.7778	1	.4658	-1.191	>.20
2	.5000	.3725	2		0	.3725	0.373	>.70
3	.4545	.3636	9	.7500	2	.4338	0.139	>.80
4	.5000	.3673	4		0	.3673	0.551	>.50
5	.5000	.3778	8	.6250	2	.4272	0.465	>.60
6	.2000	.3958	5		0	.3958	-0.895	>.30
7	.6667	.3542	5	.6667	1	.4063	1.299	>.10
8	.4000	.3750	5		0	.3750	0.115	>.90
9	.5000	.3725	2		0	.3725	0.373	>.70
10	.3333	.3846	1	.7500	2	.6282	-1.057	>.20
12			0		0			
13	.4000	.3878	4	.6667	1	.4436	-0.196	>.80
14	.4000	.3878	4	.6667	1	.4436	-0.196	>.80

TABLE 19

Difference Within the Lack of Information About Self Category Between Counselor Client-Graduation Rate (P_1) and Criterion Client-Graduation Rate (P_2) with Data for Obtaining P_2

Co.	Couns P_1	Freshman		Sophomore		Criterion P_2	z	P
		Crit P	Couns N	Crit P	Couns N			
1	.4286	.5258	13	.6835	1	.5371	0.814	>.40
2	.5556	.5160	7	.6923	2	.5552	0.002	>.90
3	.6818	.5050	26	.6613	18	.5689	1.513	>.10
4	.5454	.5194	20	.6795	2	.5340	0.107	>.90
5	.3750	.5497	35	.7313	13	.5989	-3.167	<.01*
6	.6154	.5117	13		0	.5117	0.748	>.40
7	.5000	.5300	26	.6806	8	.5654	-0.769	>.40
8	.6667	.5092	10	.6970	14	.6188	0.483	>.60
9	.6316	.5048	18	.6962	1	.5149	1.017	>.30
10	.6765	.5025	25	.6760	9	.5484	1.502	>.10
12	.1538	.5324	10	.7143	3	.5756	-3.077	<.01*
13	.8462	.5069	9	.6710	4	.5574	2.081	<.05*
14	.6316	.5189	14	.6667	5	.5578	0.648	>.50

* Significant at the level of confidence indicated.

TABLE 20

Difference Within the Lack of Information about Environment Category Between Counselor Client-Graduation Rate (P_1) and Criterion Client-Graduation Rate (P_2) with Data for Obtaining P_2

Co.	Couns P_1	Freshman		Sophomore		Criterion P_2	z	P
		Crit P	Couns N	Crit P	Couns N			
1	.0000	.5600	2		0	.5600	-1.595	>.10
2	.3333	.5200	2	.7500	1	.5967	-0.930	>.30
3	.5000	.5200	2	.7143	2	.6172	-0.152	>.80
4	.5000	.5385	1	.6250	1	.5818	-0.235	>.80
5	.5000	.5200	2		0	.5200	-0.057	>.90
6	.6667	.4762	6		0	.4762	0.934	>.30
7	1.0000		0	.6250	1	.6250	0.775	>.40
8			0		0			
9	.5000	.5200	2		0	.5200	-0.235	>.80
10	.7143	.5000	3	.6000	4	.5571	0.838	>.40
12	.0000	.5600	2		0	.5600	-1.595	>.10
13	.6667	.5000	3		0	.5000	0.577	>.50
14	1.0000	.4800	2		0	.4800	1.473	>.10

TABLE 21

Difference Within the Conflict Within Self Category Between Counselor Client-Graduation Rate (P_1) and Criterion Client-Graduation Rate (P_2) with Data for Obtaining P_2

Co.	Couns P_1	Freshman		Sophomore		Criterion P_2	z	P
		Crit P	Couns N	Crit P	Couns N			
1	.0000	.3556	1	.6071	1	.4814	-1.363	>.10
2	.5000	.3409	2	.6000	4	.5136	-0.067	>.90
3	.5500	.2895	8	.6470	12	.5040	0.322	>.70
4	.2500	.3721	3	.5714	1	.4219	-0.696	>.40
5	.3636	.3846	7	.5600	4	.4484	0.566	>.50
6	.5000	.3333	4		0	.3333	0.707	>.40
7	.3750	.3750	6	.5556	2	.4202	0.259	>.70
8	.5000	.3243	9	.5769	3	.3874	0.804	>.40
9	.5000	.3333	4		0	.3333	0.707	>.40
10	.0000		0	.5714	1	.5714	1.155	>.20
12			0		0			
13	.5000	.3556	1	.5714	1	.4635	0.104	>.90
14	.0000	.3556	1		0	.3556	0.743	>.40

TABLE 22

Difference Within the Conflict With Others Category Between Counselor Client-Graduation Rate (P_1) and Criterion Client-Graduation Rate (P_2) with Data for Obtaining P_2

Co.	Couns P_1	Freshman		Sophomore		Criterion P_2	z	P
		Crit P	Couns N	Crit P	Couns N			
1	.0000	.3684	3		0	.3684	-1.323	>.10
2	.5000	.3000	2		0	.3000	0.617	>.50
3	.5714	.2500	6	1.000	1	.3571	1.183	>.20
4	.0000	.3333	1		0	.3333	-0.707	>.40
5	.5000	.3000	2		0	.3000	0.617	>.50
6	.3333	.3158	3		0	.3158	0.065	>.90
7			0		0			
8	.0000	.3500	2		0	.3500	-1.039	>.30
9			0		0			
10	.0000	.3333	1		0	.3333	-0.707	>.40
12	1.0000		0	1.000	1	1.0000	0.000	>.90
13	.6667	.3000	2	1.000	1	.8667	-1.019	>.30
14			0		0			

TABLE 23

Difference Within the Lack of Skill Category Between Counselor Client-Graduation Rate (P_1) and Criterion Client-Graduation Rate (P_2) with Data for Obtaining P_2

Co.	Couns P_1	Freshman		Sophomore		Criterion P_2	z	P
		Crit P	Couns N	Crit P	Couns N			
1	1.0000	.4167	1		0	.4167	1.183	$>.20$
2	.0000	.4583	1		0	.4583	-0.920	$>.30$
3	.3333	.4348	2	.6667	1	.5121	-0.620	$>.50$
4	.5000	.4348	2		0	.4348	0.186	$>.80$
5	.8000	.3810	4	.3333	1	.3715	1.983	$<.05$*
6	.0000	.5000	3		0	.5000	-1.732	$>.05$
7	.5000	.4348	2		0	.4348	0.186	$>.80$
8	.5000	.4286	4		0	.4286	0.289	$>.70$
9	1.0000	.4167	1		0	.4167	1.183	$>.20$
10	.0000	.4583	1	.6667	1	.5625	-1.603	$>.10$
12			0		0			
13	.0000	.4783	2		0	.4783	-1.354	$>.10$
14	.6667	.4348	2	.3333	1	.4010	0.939	$>.30$

* Significant at the level of confidence indicated.

among clusters, and (3) comparison between factor-clusters.

Comparison Among Individual Counselors

Procedure. The counselors with diagnostic bias were revealed in Chapter III as a part of the replication of Borresen's study (Table 11). The nature of this bias can be seen in Figure 1. Difference in client-graduation rate can be found in Tables 16 through 23.

In the first comparison, the nature of each counselor's bias was compared to his client-graduation rate for the appropriate categories.

Second, the over-all client-graduation rate of the combined biased counselors (Counselors 3, 6, 8, 10 and 12) was compared to the over-all client-graduation rate of the combined nonbiased counselors (Counselors 1, 2, 4, 5, 7, 9, 13 and 14).

Third, the over-all client-graduation rate of the two counselors biased toward seeing a higher rate of vocational cases (Counselors 10 and 12) was compared to that of the two counselors biased toward a high rate of emotional cases (Counselors 3 and 8).

Results. The first comparison shows no clear relationship between bias and success among counselors. Five of the counselors display bias. However, seeing a larger portion of one's cases as having a certain problem does not appear to stem from one being more successful with that type of problem. Table 24 presents the five biased

TABLE 24

Biased Counselors with Description of Bias and Comparative Success on Biased Categories

Counselor	Categories Used More Often Category	 Success	Categories Used Less Often Category	 Success
3	2 (Em)	>.80 more	1 (Voc)	>.05 more
	3 (CS)	>.70 more	1 (LIS)	>.10 more
6	2 (LIE)	>.30 more		
8	2 (Em)	>.50 more		
	3 (CS)	>.40 more		
10	1 (Voc)	>.20 more	2 (Em)	>.50 less
	2 (LIE)	>.40 more	3 (CS)	>.20 more
12	1 (Voc)	<.01 less*	2 (Em)	N = 0
			3 (Ed)	N = 0

* Significant at the level of confidence indicated.

counselors with the categories they use significantly more or less often than other counselors to describe their clients and the relative success they have with that category compared to other counselors.

In the second comparison, no significant difference was found between the client-graduation rates of the biased and nonbiased counselors (Chi-square = 1.746, df = 1, P >.10). The biased counselors as a group had a client-graduation rate of 56 per cent whereas 50 per cent of the clients of the nonbiased counselors graduated.

In the third comparison, no significant difference was found between the client-graduation rates of the two counselors who saw more vocational cases than expected, Counselors 10 and 12, and the two counselors who saw more emotional cases than expected, Counselors 3 and 8 (Chi-square = 1.390, df = 1, P >.20). Counselors 10 and 12 had a combined client-graduation rate of 51 per cent and Counselors 3 and 8 had a combined rate of 60 per cent. It might be noted that 28 per cent of the case load of Counselors 3 and 8 were emotional cases compared with 1.6 per cent for Counselors 10 and 12 and emotional cases as a whole graduated less often than vocational cases.

Comparison Among Clusters

Procedure. The nature of each cluster's bias is found in Table 13. The bias of each cluster is described in terms of diagnostic categories used more or less often than expected to describe client's problems. Table 25 shows the significance of difference in the client-graduation rate of each cluster as compared with all other clusters combined. The nature of the bias in each cluster was then compared to the success with cases representing the appropriate categories.

Results. When considering counselor-clusters, no clear relationship is seen between bias and success. The following table presents the information from Table 13 concerning the nature of the bias along with pertinent information from Table 25 including both the direction and the level of significance of the differences.

Counselor-cluster	Categories Used More Often		Categories Used Less Often	
	Category	Success	Category	Success
I			1 (LIS)	>.20 more
II	1 (Voc) 1 (LIS)	>.40 less >.60 less	2 (Em) 3 (CS)	>.50 less >.20 less
III	2 (Em) 3 (CS)	>.70 more >.40 more	1 (Voc) 1 (LIS)	>.05 more >.05 more
IV	1 (LIS)	<.01 less*		

* Significant at the level of confidence indicated.

Comparison Between Factor-Clusters

Procedure. As has been discussed previously (p. 41), Factor-cluster A differs from Factor-cluster B on four categories in the description of client problems (Vocational, Emotional, Lack of Information About Environment, and

TABLE 25

Difference in Client-Graduation Rate Among Counselor-clusters for Each Diagnostic Category

Categ	Couns-Cluster	Couns P_1	Freshman		Sophomore		Crit P_2	z	P
			Crit P	Couns N	Crit P	Couns N			
1 (Voc)	I	.6154	.5220	46	.6220	6	.5335	1.184	>.20
	II	.5263	.5372	40	.6620	17	.5744	-0.734	>.40
	III	.6626	.4973	43	.6458	40	.5689	1.722	>.05
	IV	.4919	.5814	99	.6667	25	.5986	-2.425	<.05*
2 (Em)	I	.2857	.3023	7		0	.3023	-0.096	>.90
	II	.0000	.3061	1		0	.3061	-0.664	>.50
	III	.4750	.1923	24	.8333	16	.4487	0.335	>.70
	IV	.3333	.3750	18	.5625	6	.4219	-0.879	>.30
3 (Ed)	I	.2667	.4444	13	.7143	2	.4804	-1.657	>.05
	II	.3333	.3958	1	.7143	2	.6081	-0.975	>.30
	III	.4444	.3636	16	.7143	2	.4026	0.362	>.70
	IV	.5455	.3333	19	.5000	3	.3560	1.856	>.05
1 (LIS)	I	.6250	.5085	35	.6428	5	.5253	1.262	>.20
	II	.5319	.5198	35	.6825	12	.5613	-0.406	>.60
	III	.6623	.4911	43	.6341	34	.5542	1.910	>.05
	IV	.4797	.5752	99	.7059	24	.6007	-2.738	<.01*
2 (LIE)	I	.5455	.4286	11		0	.4286	0.784	>.40
	II	.5556	.5000	5	.6000	4	.5444	0.067	>.90
	III	.4286	.4762	4	.8333	3	.6292	-1.099	>.20
	IV	.5714	.5000	5	.5714	2	.5204	0.270	>.70
3 (CS)	I	.3750	.3590	6	.5926	2	.4174	-0.243	>.80
	II	.0000		0	.6071	1	.6071	-1.243	>.20
	III	.5263	.2308	19	.7000	19	.4654	0.753	>.40
	IV	.3704	.4800	20	.5000	7	.4852	-1.193	>.20
4 (CO)	I	.3333	.3571	8	1.0000	1	.4285	-0.577	>.50
	II	.5000	.3333	1	1.0000	1	.6667	-0.500	>.60
	III	.4545	.2500	10	1.0000	1	.3182	0.971	>.30
	IV	.3333	.3158	3		0	.3158	0.065	>.90
5 (LS)	I	.1667	.5294	6		0	.5294	-1.781	>.05
	II	.0000	.4545	1	.5000	1	.4772	-1.351	>.10
	III	.3750	.4375	7	.5000	1	.4453	-0.400	>.60
	IV	.7000	.2857	9	.0000	1	.2571	3.205	<.01*

* Significant at the level of confidence indicated.

Conflict within Self). The bias thus described was compared to success with clients in these categories to determine if a relationship existed.

Results. No significant difference in success rate between the two factor-clusters was found for any of the four categories. It might be noted that in all four cases the slightly higher success rate was in favor of the factor-cluster that used that category at a higher rate. The following table shows the client-graduation rate and N for both factor-clusters on each category along with results of the tests of significance of the differences.

Category	Graduation Rate		N		Chi-square	P
	Factor-cluster		Factor-cluster			
	A	B	A	B		
1 (Voc)	57%	56%	109	207	.021	>.80
2 (Em)	25%	42%	8	64	.873	>.30
2 (LIE)	55%	50%	20	14	.083	>.70
3 (CS)	33%	46%	9	65	.526	>.30

Discussion

The results of this study strongly suggest that some counselors are more successful with their clients than other counselors, whether considering the total client load or only clients with similar problems. This shouldn't come as too much of a surprise to anyone. The fact that counseling is a profession would seem to indicate that we expect counseling, and therefore the counselors, to have some sort of effect on those individuals who are counseled. Since there are individual differences in virtually every other realm of human endeavor, why should there not be differences in the ability of counselors? As one further step in this line of supposition, if there really are differences in the effect that counselors have on clients, is it not realistic to assume that some counselors, maybe only a very few, may actually be counseling to the detriment of those whom he is trying to help? If this is the case, we in counselor education badly need to know how to identify those counselors who do more harm than good. We need to know whether they are "bad" in general or are inadequate only with certain types of problems. From an educator's standpoint, it would be equally important to know whether, and under what conditions, these counselors can be trained to do adequate work.

No relationship was found between counselor diagnostic bias and success in counseling. It is possible, however, that some type of relationship does exist but could not be isolated in this study. Such a failure might be traced back to insufficient sample size to allow some meaningful types of tests. One such test not run because of sample size was the comparison of success on vocational problems of counselors biased toward seeing more vocational problems than expected with that of counselors biased towards seeing fewer vocational problems. The same could have been done with other diagnosed problems. It is quite possible that those counselors that see a higher than expected proportion of vocational problems among their clients are actually more successful with that type of problem. The same could be true for those who are biased toward seeing an excess of emotional problems. On the other hand, the direction of the bias might reflect the relative ability of the counselor to elicit from the client his true feelings. Possibly those counselors who are biased toward emotional problems are more in tune with what the client would really like to talk about. Maybe his demeanor inspires confidence in the client enabling him to discuss even problems difficult to face and he is therefore a better counselor with all problems. Is one who is biased toward vocational problems afraid to allow the development of emotional problems? Or could it be that he is so insensitive to all but what the client says with words that he never really understands what is bothering the client and instead attributes the difficulty to vocational misplacement or some other more easily understood issue? Since clients who discuss emotional problems with counselors graduate at a lower rate than those who discuss vocational problems, those counselors might actually be doing the client a favor by not eliciting emotional problems. I suppose bias could be due to one reason with some counselors and the other with other counselors. I suppose it could even be due to both factors in one counselor. Itcould even be due to additional factors or entirely different ones. The point is, we don't know and are the poorer for it. We must have further investigations directed at identifying successful and unsuccessful counselors according to a variety of criteria. Then maybe we can begin to find answers to some of these other questions.

This study was not successful in doing much to answer the above questions. Even so, some of the findings do promote development of tentative hypotheses. As an illustration, although Counselor-cluster II (emphasized Vocational and Lack of Information About Self and de-emphasized Emotional and Conflict within Self) and III (Opposite of Cluster II) did not differ significantly from the criteria on any of the four categories, it is provocative that existing differences were consistently toward being less successful for Counselor-cluster II and toward being more successful for Counselor-cluster III. However, the over-all success rate between the two clusters if not significantly different (Chi-square = .93, df = 1, P $>$.30). If the difference had been significant, one would have had strong reason to wonder if that group of counselors who tend to develop and deal with the emotional problems in their clients to the exclusion of vocational problems are actually better counselors. Even so, it is still a tempting suspicion since Counselor-cluster III is somewhat more successful in spite of the loading of emotional problems which as a group display a significantly lower graduation rate than vocational cases. However, we just don't know -- yet!

CHAPTER V

SUMMARY AND CONCLUSIONS

OBJECTIVES

The basic purpose of this study was to study the college counselor as a variable in the graduation of counseled college students. In addition to this basic purpose, three studies which had been conducted at the University of Missouri were replicated. The study by Shepherd (1962) and the study by Borresen (1964) had been submitted as doctoral dissertations. The third study (Johnson, 1963) was a masters degree thesis.

In dealing with the basic purpose of this study, three specific questions were investigated:

1. Do the clients of some college counselors graduate from college at a significantly higher or lower rate than is expected?
2. In a subsample composed of clients who have been diagnosed as having similar problems, do the clients of some counselors graduate at a significantly higher or lower rate than is expected?
3. If there is any difference among counselors in "1" or "2" above, what way, if any, is it related to counselor diagnostic bias?

Most or all of the questions originally posed in each of the three studies replicated were considered here. Both research hypotheses developed by Shepherd (1962) were tested in this study. They were (1) there is no difference in the proportional number of college students who receive the baccalaureate degree or the equivalent from a counseled group than that from a noncounseled group matched as to sex, academic ability, and division in which registered, and (2) there is no difference in the proportional number of college students counseled who receive the baccalaureate degree or the equivalent from a group with a particular diagnosed problem than there is from a group with a different problem. The two questions posed by Borresen (1964) which were dealt with in this study were (1) under standard operational conditions of the University of Missouri Testing and Counseling Service, do counselors differ from each other in the frequency with which they use certain diagnostic classifications to describe the problems of their clients, and (2) within the limits of data available, what is the nature and structure of counselor bias. Johnson (1963) investigated two samples for a possible relationship between length of counseling and success in counseling in selected kinds of cases. The research hypotheses tested were (1) there is no relationship between number of interviews and success for all diagnoses combined, (2) there is no difference between male and female clients in terms of number of interviews, and (3) there is no relationship between number of interviews and success in counseling for cases diagnosed 1 (Voc) - 1 (LIS) and for those diagnosed 2 (Em) - 3 (CS) and 2 (Em) - 4 (CO).

PROCEDURE

The 471 clients who composed the sample used in the basic study satisfied four criteria: (1) were entering freshmen at the University of Missouri in academic years 1955-56, 1956-57, 1957-58, 1958-59, or 1959-60, (2) were counseled by one of the University Testing and Counseling Service doctoral candidate staff counselors included in this study during either their freshman or sophomore years or both, (3) had scores of T score 40 or higher on both of the freshman placement tests, and (4) were counseled on a problem which could be satisfactorily diagnosed from case notes by judges. The 13 counselors used in the study were doctoral candidates working as regular staff counselors on a part-time basis during both the freshman and sophomore years of any of the classes.

In the replication of the Borresen (1964) study, the entire sample described above was used. For the Shepherd (1962) replication, a noncounseled comparison group was matched to the counseled group on placement test scores, class, sex, and division within the University in which registered. Since nine of the counseled group were not successfully matched, a counseled group and a comparison group resulted with 462 students in each. The replication of the Johnson (1963) study was done using that part of the basic counseled sample with appropriate diagnostic codes.

In the basic study, chi-square was used in the first part to test the client graduation rate of each counselor against the criterion of the combined client-graduation rate of all other counselors. In testing the second question, for each of the eight categories, a test of difference in proportions was used to test the significance of the difference between each counselor's client-graduation rate and the combined rate of all other counselors. The third part was dealt with by considering counselors individually, divided into four clusters, and divided into two factors. In each case, comparisons were made between counselor diagnostic bias, as was found in the Borresen replication and counselor success rate found in the first two parts of this study.

In the Shepherd replication, the difference between the graduation rate of the counseled and noncounseled groups was tested by chi-square. Chi-square was also used to test the difference in graduation rates associated with different problems.

The replication of the Borresen study was begun by forming frequency distributions for each counselor on the categories in each dimension. To obtain counselor diagnostic bias, chi-square was used to compare these distributions with the criterion distributions derived by combining the distributions of all other counselors. The clusters of counselors were found by using factor analysis and cluster analysis on the distributions of the counselors.

In the Johnson replication, frequency distributions by number of interviews were formed for each code. Visual inspection of the plotted distributions and chi-square were used to test the hypotheses.

RESULTS

In considering the results of the study, the replications will be dealt with first.

In the replication of the Shepherd (1962) study, when the total counseled group was considered, there was no difference between the counseled and noncounseled groups (Chi-square = 2.096, df = 1, $P > .10$). Shepherd had found a difference significant at the .001 level of confidence. However, when the one-interview group was removed from the counseled sample, the difference between the counseled and noncounseled group was significant (Chi-square = 4.69, df = 1, $P < .05$). A significant difference in graduation rate was found among the three categories in the Problem dimension (Chi-square = 9.54, df = 2, $P < .01$). Shepherd had also found a significant difference at the .01 level of confidence. A significant difference in graduation rate was

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also found among the nine codes large enough to be analyzed. (Chi-square = 20.03, df = 8, P <.02). Shepherd had found a significant difference at the .01 level of confidence.

In the replication of the Borresen (1964) study, this study supports the Borresen finding that a counselor diagnostic bias of some type was in effect. Five of the thirteen counselors differed from their own criterion group on at least one of the two dimensions at the .05 level of confidence. Moreover, the nature and structure of counselor bias tentatively identified by Borresen are supported by this study. The dimensions of counselor bias seem to include an affective-cognitive dimension and a motivational conflict-lack of information dimension.

In the replication of the Johnson (1963) study, the results obtained are essentially opposite to those found by Johnson. A relationship at the .02 level of confidence was found between number of interviews and success for all diagnoses combined (Chi-square = 16.02, df = 6). Johnson had found no significant difference. There is a difference between male and female clients in terms of number of interviews (Chi-square = 15.01, df = 7, P <.05). Johnson's differences were significant in one sample and not significant in another. A significant relationship exists between number of interviews and success in counseling for clients diagnosed 1 (Voc) - 1 (LIS) (Chi-square = 13.35, df = 4, P <.01) but not for the group diagnosed 2 (Em) - 3 (CS) and 2 (Em) - 4 (CO) (Chi-square = 0.61, df = 3, P >.80). Johnson had found the opposite results. No clear-cut "failure" zone appears in the frequency distribution of the 2-3 and 2-4 group as was found in the Johnson study. Some "dip" in success did appear, however.

The results of the basic study indicate differences in success among the counselors. Two counselors differed from their own criterion at the .05 level of confidence in the over-all graduation rate of their clients. Within each category, significant differences between the client-graduation rate of each counselor and his own criterion were found for three counselors and on three categories. However, no clear relationship between diagnostic bias and counselor success was found.

CONCLUSIONS

Several conclusions may be drawn from the results of this investigation. First, the graduation rate of counseled students varies according to the kind of problem which is developed in counseling. Clients with vocational problems tend to graduate at a higher rate than those with emotional problems. Those counselees whose problems stem from lack of information graduate at a higher rate than those with problems caused by an interpersonal or intrapersonal conflict.

Counselors, using the same objective reference point for diagnosis of client problems tend to classify the problems of their clients or develop them differently. The distribution of diagnostic categories used by some counselors differs from the criterion of the distribution of all other counselors.

The nature and structure of counselor bias in this setting can be tentatively identified as having an affective-cognitive dimension and a motivational conflict-lack of information dimension. Those counselors who are biased toward seeing a larger proportion of vocational cases than expected tend also to see a smaller proportion of emotional cases. The reverse is also true. Also those counselors who tend to use a lack of information causal category an excessive degree tend to use the conflict categories less than expected.

Some counselors are more successful than other counselors when the total client-graduation rate of each counselor is used as a criterion of success. There are differences among counselors when compared as to the graduation rate of their entire client load.

Some counselors are more successful than other counselors when each counselor's client-graduation rate of clients with similar problems is used as a criterion of success. When considering only clients with problems which have been diagnosed vocational, some counselors are more successful than others. The same is true when considering other types of problems.

In summary, clients counseled on different problems graduate at different rates. Some counselors see, or develop, a disproportionate number of certain types of problems in their clients. Also, some counselors are more successful, indicated by a higher client-graduation rate, than are other counselors. However, it has not been established if there is a relationship between counselor success and their seeing atypical proportions of certain kinds of cases.

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APPENDIX A

DEPOSITORY

For possible follow-up of this study, all data used may be found in Appendix A of the dissertation copies of the writer and of Dr. Robert Callis.